

EXHIBIT 21

IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

FRANKLIN BUONO,)
)
Plaintiff,)
)
v.) CIVIL ACTION NO.
) 7:17-CV-05915-PMH-LMS
POSEIDON AIR SYSTEMS, VICTORY)
AUTO STORE, INC., VICTORY AUTO)
STORES, INC. d/b/a POSEIDON)
AIR SYSTEMS, WORTHINGTON)
INDUSTRIES, INC. AND TYCO)
PRODUCTS LP,)
)
Defendants.)

TYCO FIRE PRODUCTS LP,)
)
Third-Party Plaintiff,)
)
v.)
)
OPRANDY'S FIRE & SAFETY INC.)
)
Third-Party Defendant.)

Remote Videoconference Deposition of
ERIC J. BOELHOUWER, PH.D.

July 21, 2020

11:02 a.m.

1360 Peachtree Street, NE, Suite 1150
Atlanta, Georgia

By Marcia Arberman, RPR, CCR B-1059

E X A M I N A T I O N

Examination by Mr. Kirkpatrick

Page

4

E X H I B I T S

Exhibit Description

Page

Exhibit 1 Curriculum vitae and testimony
list

7

Exhibit 2 Boelhouwer report

24

1 APPEARANCES OF COUNSEL:

2 On behalf of the Plaintiff (via
3 videoconference):

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1 ERIC J. BOELHOUWER, Ph.D.,
2 having appeared remotely before me, having been first
3 duly sworn, was deposed and testified as follows:

4 EXAMINATION

5 BY MR. KIRKPATRICK:

6 Q Good morning, Dr. Boelhouwer.

7 A Good morning.

8 Q My name is James Kirkpatrick, and I
9 represent Tyco Fire Products. My colleague
10 Daniel Whitely is on as well.

11 Could you just state your full name and
12 address for the record?

13 A Eric John Boelhouwer, 10 -- what is it?
14 1360 Peachtree Street, Suite 1150, Atlanta, Georgia
15 30307.

16 Q And, sir, you testified under oath before;
17 right?

18 A Yes, sir.

19 Q Okay. If at any time you don't understand a
20 question that I'm asking, I just ask you to tell me
21 either to clarify it or rephrase. Otherwise, I'll
22 assume that you understand the question. Does that
23 sound good?

24 A Yes, sir.

25 Q Okay. Is there any reason that you can't

1 testify truthfully today or understand the oath that
2 you're under?

3 A No, sir.

4 Q Separate from the process of preparing your
5 report, what did you do to prepare for your testimony
6 today?

7 A I reviewed the additional depositions that I
8 received -- have been received since the time of my
9 report. And I reviewed my file and the materials
10 listed in my report. And I had maybe a couple
11 conversations with Tara Fappiano.

12 Q I will say something that we found out over
13 these remote depos, is that talking over each other is
14 super-hard on the court reporter. So I'll try not to
15 talk over you, and I just ask that you also try not to
16 talk over me.

17 So without getting into the details of the
18 conversations with Ms. Fappiano, can you just tell me
19 when those were and how long they lasted?

20 A We had one last Friday for approximately
21 45 minutes, one this morning for maybe five minutes.

22 Q Okay. Was anyone else on the line for those
23 conversations?

24 A No, sir.

25 Q Other than Ms. Fappiano, have you discussed

1 this deposition or preparing for this deposition with
2 anyone else?

3 A No, sir.

4 Q Okay. And you mentioned the deposition
5 transcripts and the material listed in your report and
6 your report. Other than the things that I just said,
7 did you review anything else in preparing for your
8 deposition?

9 A Just the materials listed for my report and
10 the materials that would have been received for the
11 deposition since the time of my report. That's all I
12 can recall as I sit here.

13 Q Okay. And do you recall which deposition
14 transcripts you reviewed?

15 A We received Coelho Juliano and two volumes
16 of Taranto.

17 Q Okay. Now, Dr. -- is it Boelhouwer?

18 A Yes, sir, Boelhouwer.

19 Q Great. Now, Dr. Boelhouwer, if you could,
20 do you have Exhibit Share open?

21 A Yes.

22 Q Okay. And if you look in the Marked
23 Exhibits folder, I premarked a couple of exhibits. Do
24 you see that?

25 A Yes, sir.

1 (Marked for identification, Exhibit 1.)

2 BY MR. KIRKPATRICK:

3 Q Okay. If you could click on Exhibit 1 for
4 me. This is your resume?

5 A Yes, sir. It appears to be a copy of my
6 current CV and my testimony list.

7 Q Okay, great.

8 And you said this is the most up-to-date
9 version of this --

10 A Yes, sir.

11 Q -- which is updated in March of 2019?

12 A Yes, sir.

13 Q Okay. Would you consider it up-to-date?

14 A I probably need to add a new entry to it
15 with regard to my volunteer activities, professional
16 activities. I've just recently been appointed to be
17 the committee chair for the ANSI Z535.7 standard for
18 visual communications, which is under development. So
19 I do need to make an entry for that.

20 Q Okay. Are any of the things that you would
21 need to add to this CV relevant to the opinions that
22 you have provided in your report?

23 A No, sir.

24 Q Okay. Did you add or subtract anything from
25 your CV because you were retained for this case?

1 A No, sir.

2 Q Okay. Do you maintain any other versions of
3 your CV, or do you just have the one that you use for
4 everything?

5 A I mean, I update it periodically, and then I
6 mark the updated version. There may be some older
7 versions out there prior to March 2019.

8 Q Okay. But you just have one current version
9 of your resume?

10 A Yes, sir. Just one version of my CV that I
11 use for all matters.

12 Q Okay, great.

13 I notice that your CV does not contain -- I
14 don't know if I missed it -- your employment history;
15 is that right?

16 A No. I don't have an entry for that.

17 Q Okay. Is there a reason for that, or just
18 you don't include it?

19 A I just haven't historically. I probably
20 should. I can go through it briefly, if you'd like.

21 Q Sure. Let's start after you graduated in
22 1998 from Georgia Institute of Technology. What job
23 did you have after that?

24 A Sure. I went into a professional
25 development program from BASF Corporation. I

1 incorporated three rotational assignments. One was in
2 corporate engineering in Asheville, North Carolina.
3 One was a product stewardship in New Jersey. And then
4 I did a training role in a refinery steam cracker that
5 was under production in Port Arthur, Texas.

6 Following those rotational assignments that
7 lasted about 18 months, give or take a little bit, I
8 moved to Baton Rouge, Louisiana, and I was a Process
9 Engineer I for PolyTHF and THF, which is manufacturing
10 chemicals, industrial chemicals.

11 And then from there I -- let's see. So I
12 transitioned into Year 2, I believe, in that same
13 role. In Year 3 I think I was in the S-MOIPA plant.
14 And then I was in specialty amines after that. So it
15 was all very closely geographically -- the plants are
16 adjacent to each other, but it was just different
17 responsibilities for different chemical manufacturing.

18 And then I left the BASF Corporation to go
19 to Auburn to pursue my Ph.D.

20 Q And what year was that that you left?

21 A That was the end of 2006.

22 Q Okay. So you were there from '98 to '06?

23 A It would be January of '99 to November of
24 '06.

25 Q Okay. Now, in the rotational assignments

1 that you described, can you just generally discuss
2 more what those rotations entailed?

3 A Sure. My first rotational assignment was in
4 corporate engineering just outside of Asheville,
5 North Carolina. And I was doing detailed design
6 engineering for a chemical plant that was to be built
7 at the Geismar facility.

8 My next rotational assignment was in product
9 stewardship in New Jersey at the BASF headquarters at
10 the time. It was in Mount Olive, New Jersey. And
11 that primarily involved Materials Safety Data Sheets,
12 as they were known at the time; product labeling for
13 all the products for the chemicals division; and then
14 doing training regarding some potential regulatory
15 issues for distributors and other buyers of some
16 certain subchemicals that we were manufacturing at
17 that time.

18 Third is a training assignment related to
19 training operators as it related to a new steam
20 cracker was going to be -- was under construction. It
21 came on line in Port Arthur, Texas. So in the period
22 of time during construction before the operators can
23 start running the plant, there is about a year that
24 they are undergoing a period of training to make sure
25 that they are trained to operate the facility.

1 Q And then after that you discussed
2 Engineering Levels I, II, and III. So are you a
3 licensed engineer?

4 A I am not a professional engineer. No, sir.

5 Q Okay. Can you just describe what -- because
6 I haven't heard of that before, the Engineering I, II,
7 and III, what the difference between those are.

8 A Sure. So they're generally just roles in
9 the manufacturing plant with regard to the day-to-day
10 production of chemicals as it relates to, you know,
11 making sure the raw material is there, following up on
12 the management of change, keeping up with production,
13 making sure the shipments are going out. It's just
14 the day-to-day of running the chemical plant, making
15 sure you're producing the chemicals all set for the
16 customer.

17 Q Okay. So you got your MBA while you were
18 working full-time; is that right?

19 A Yes, sir.

20 Q Okay. And then you went to, as you
21 mentioned, Auburn in 2006. Can you just describe
22 what's involved in obtaining an industrial and systems
23 engineering degree?

24 A So starting in January of 2007, I started
25 taking classes regarding process safety, occupational

1 safety, ergonomics. There's a core set of classes
2 regarding industrial engineering that they wanted us
3 to fulfill so you have a sufficient basis in
4 industrial engineering in addition to what your
5 subspecialty is, mine being human factors, ergonomics,
6 occupational safety. So there's kind of both of those
7 things going on at the same time.

8 Also, in addition to that, Auburn is part of
9 an education resource center under NIOSH, which funded
10 my doctoral studies. So my doctoral fellowship is
11 paid for by NIOSH. But that was a joint program
12 between Auburn and University of Alabama Birmingham
13 where Auburn is responsible for certain aspects of the
14 program and UAB is responsible for other aspects of
15 the program. And there was also an expectation I
16 would also take classes at UAB as well for
17 epidemiology and a few other topics.

18 Q Okay. And were you a full-time student from
19 January of 2007 until you received your Ph.D.?

20 A Yes, sir, full-time student. During that
21 time I did have an internship at Dorris and Associates
22 as well.

23 Q Okay. And then after you received your
24 Ph.D., where did you work after that?

25 A I came onboard with Dorris and Associates

1 full-time at the same time I finished my doctoral
2 program.

3 Q Okay. Have you done litigation consulting
4 since you started at Doris and Associates?

5 A Primarily assisting with litigation
6 consulting earlier on and then having my own
7 retentions after a couple of years and also doing a
8 fair number of non-litigation projects over the last
9 ten years as well.

10 Q Okay. What percentage of your time over the
11 last ten years would you say has been devoted to
12 litigation consulting as opposed to the non-litigation
13 projects you mentioned?

14 A Approximately 70 percent of my time is
15 litigation related, and 30 percent is non-litigation
16 related.

17 Q And has that been pretty steady throughout
18 the last ten years?

19 A I think that's pretty fair. That's been
20 relatively stable over the last ten years.

21 Q Okay. And what type of non-litigation
22 projects do you do?

23 A Primarily for manufacturers of chemicals or
24 consumer products or, really, any variety of products,
25 whether it's industrial or consumer products,

1 generally related to the warnings and instructions and
2 safety communications provided by those manufacturers
3 for their products.

4 It can be Safety Data Sheets. It can be
5 product labeling, owner's manuals. In an automotive
6 context, it generally relates to on-product labels or
7 owner's manuals for different manufacturers.

8 Q And then in terms of the areas where you do
9 litigation consulting, can you describe what types of
10 cases those are?

11 A Generally, the cases cover occupational
12 safety, human-product interaction, ergonomics. You
13 know, we generally use the term "human factors" as it
14 relates to the human-product interaction. So those
15 are generally the areas that I opine about.

16 Q Do the cases always involve products, as
17 in -- is the question generally, in the cases that you
18 consult on, whether a product had adequate or
19 appropriate labels?

20 A I would think that's a fair percentage of
21 it. In an automotive incident, there may be more of a
22 human factors perception-reaction time question or a
23 brake force question. So there would be some subset
24 of my cases that may not always have a product
25 literature component. But, generally, it's around the

1 warning and instructions related to the product.

2 Q Do you have a rough idea of what percentage
3 of cases involve what you just described, with a
4 product and some kind of warning issue?

5 A I really don't. I would think it's
6 certainly more than 50 percent, but I wouldn't know
7 how to estimate it, how much more over 50 percent.

8 Q Okay. And of the litigation consulting that
9 you do, what percentage is for the plaintiff as
10 opposed to the defense?

11 A Approximately 30 percent for plaintiffs and
12 approximately 70 percent for the defense.

13 Q And has that been consistent throughout the
14 last ten years?

15 A Probably pretty consistent over the last ten
16 years.

17 Q Okay. With respect to this case when were
18 you first retained?

19 A That's a good question. Let's see. We
20 opened the file in December of 2019. I can't recall
21 my first contact from the law firm.

22 Q What month did you say? I'm sorry.

23 A December is when we opened the file.

24 Q Okay. And do you recall who first contacted
25 you?

1 A That's a great question. It was a young
2 man, a gentleman. I can't recall his name.

3 Q Okay. Have you ever worked with
4 Ms. Fappiano's law firm, Haworth, Barber & Gerstman,
5 before this case?

6 A Yes, sir.

7 Q How many times?

8 A More than two; less than five.

9 Q Okay. Do you recall what those cases were
10 generally about?

11 A Consumer product-related injuries.

12 Q And was your role to opine on
13 warnings-related issues?

14 A On warnings-related issues, yes, sir.

15 Q And did you offer a written report in all of
16 those cases?

17 A I don't recall. I think some of them were
18 in state court. So I don't recall that we issued
19 written reports in all those matters.

20 Q Okay. Do you recall specifically one way or
21 the other, or you're not sure?

22 A I can't recall as I sit here. Is it
23 possible I wrote a report for one of those? Maybe,
24 but I just don't recall.

25 Q Okay. Did you provide testimony in all of

1 those cases?

2 A I don't think any of them proceeded to the
3 point of deposition. I think they settled after
4 disclosures of reports.

5 Q Okay. Since being retained for this case,
6 have you been retained by Ms. Fappiano's law firm
7 since?

8 A I don't believe so, no, sir.

9 Q Okay. When you were retained, what was your
10 understanding of your assignment in this case?

11 A To review materials with regard to potential
12 criticisms with regard to the safety communications as
13 they relate to the subject cylinder.

14 Q Okay. Did your understanding of your
15 assignment in this case change at any point?

16 A I think generally it was around the safety
17 communications for the subject test cylinder.

18 Q But did your understanding of what your
19 assignment was in this case change from the time you
20 were retained to now?

21 A I don't recall having a specific
22 conversation about my assignment changing, no, sir.

23 Q Okay. And you are being -- or I should say
24 that Dorris and Associates is charging for your time
25 at your hourly rate?

1 A Yes, sir.

2 Q And what rate is that?

3 A I believe it's \$240 an hour.

4 Q Okay. And is that the rate that you use for
5 all consulting?

6 A Yes, sir. For all -- file material review,
7 deposition testimony and trial testimony, yes, sir.

8 Q And is that the rate that you use for all
9 clients regardless of the type of case or the type
10 of -- for a non-litigation type of project?

11 A Well, non-litigation can be a variety of
12 different ways we structure those contracts.
13 Typically, the clients like to have a fixed number
14 they're working off of. So we'll just propose a fixed
15 fee for the non-litigation projects. At times they
16 are hourly, and I do use my same hourly rate.

17 My rate did increase in January of 2020.
18 But since this file was opened in December, we're
19 using my old 2019 rate for this matter.

20 Q Okay. And how many hours have you worked on
21 this case so far, roughly?

22 A I don't really have a good estimate of that.
23 I'd say probably more than 40, but I wouldn't know how
24 many more.

25 Q Okay. Do you know -- again estimating --

1 how many hours you've spent preparing your report?

2 A Approximately, of those 40, I'd say maybe
3 ten of those hours, somewhere in that -- maybe less.

4 Q Okay. And how many hours did you spend
5 preparing for this deposition?

6 A Probably about six hours.

7 Q And other than preparing your report and
8 preparing for the deposition, what other things have
9 you done to work on this case?

10 A Reviewing the file materials listed in my
11 report, reading the depositions, reading standards
12 that have been referenced by others, and the standards
13 that I added as well.

14 Q Okay. And just so we're clear, those are
15 reviews that were not done in preparation for this
16 deposition?

17 A I probably went back to some of those
18 standards after reviewing the Juliano and the Coelho
19 reports just to make sure that -- just to refresh
20 myself on the parts of the standards they're
21 referencing and what I'm referencing as well.

22 Q Okay. And of the depositions that you
23 mentioned, was that in preparation for the deposition,
24 or was that before?

25 A I did review the Coelho and the Juliano

1 transcripts in the last week.

2 Q Okay. But I guess my question is, do you
3 include that in your six hours that you spent
4 preparing for the deposition?

5 A Probably not, no. I would say that was
6 separate from those six hours.

7 Q Okay. Do you have an ownership interest in
8 Dorris and Associates?

9 A I do not.

10 Q Okay. Looking back at your CV -- and I
11 guess it's really two documents. So I'm looking at
12 the last page of Exhibit 1. It is the previous four
13 years of deposition and trial testimony that you have
14 had. Is this list up-to-date?

15 A Yes, I believe so. The last deposition I
16 gave was in March.

17 Q Okay. And does this -- and you don't need
18 to review every line, but is this generally, as far as
19 you know, a complete and accurate list of the
20 deposition and trial testimony that you've given over
21 the last four years?

22 A That's my understanding. That would be a
23 complete and accurate list based on my recollection as
24 I sit here.

25 Q Okay. Over the course of your career, how

1 many times would you estimate that you have given
2 testimony at trial as an expert?

3 A Two times. They're both listed on the
4 testimony list.

5 Q Okay. And then what about for deposition
6 testimony?

7 A I haven't added up the ones that are on this
8 list and probably a handful have rolled off, so I
9 would estimate between 40 and 50, I believe.

10 Q Okay. And how many cases would you estimate
11 that you have submitted a written report but not
12 provided testimony?

13 A I don't have an estimate for that. I don't
14 know.

15 Q More than 50? Less than 50? Or you just
16 have no idea?

17 A Probably more than a hundred. But that's
18 not -- I can't go back and count that, so I don't know
19 how to estimate that.

20 Q Sure. Has a Court ever disqualified you as
21 an expert or excluded your opinions in whole or in
22 part?

23 A My recollection is twice portions of my
24 opinions have been limited, but my qualifications were
25 not challenged in those matters.

1 Q Okay. What's the first one where you recall
2 that happening?

3 A The first one was in federal court in
4 Wisconsin. It's not on this list because it happened
5 prior to -- it was more than four years ago. So
6 that's one example. The other one -- let's see. The
7 other one is in state court in Arizona. And it was
8 January of this year. Part of my opinions were
9 limited.

10 Q Okay. And for that federal case in
11 Wisconsin, do you recall the names of the parties?

12 A It was consolidated at the time, so there
13 was eight different plaintiffs that -- I had written
14 reports on behalf of the eight different plaintiffs,
15 and they were all versus Electrolux. And it was
16 involving an electric -- electric or gas clothes
17 dryers of different configurations.

18 Q Okay. And then same thing for the Arizona
19 case: Do you recall the names -- oh, it's on here;
20 right?

21 A Yeah. I'm trying to find it. It's kind of
22 small here. Let's see. It's halfway down. Mendoza
23 versus State of Arizona.

24 Q Okay.

25 A The deposition was in 2017.

1 Q Okay. In the cases where you've consulted
2 other than this one, have any of them involved the
3 fire protection industry?

4 A I had one matter for a fire truck
5 manufacturer.

6 Q Okay. Are there any other ones?

7 A That's all I can recall as I sit here.

8 Q Okay. And do you recall what the issue was
9 in the fire truck manufacturer case?

10 A It regarded the human-product interaction of
11 using the levers to control the platform on the
12 ladder.

13 Q Okay. Did it involve warnings?

14 A Yes, sir. Warnings, instructions, training.
15 Yes, sir.

16 Q Okay. And so -- okay. How about cases
17 involving compressed gas cylinders?

18 A I had one non-litigation project regarding
19 compressed gas cylinders. I can't recall any, others
20 litigation-related projects, as I sit here
21 specifically.

22 Q Okay. What was that non-litigation project?

23 A You're probably aware in the last couple
24 years that cryotherapy is a business that is out
25 there. So one of the cryotherapy manufacturers is

1 local here in Atlanta, so they asked me to review
2 their warnings and instructions for their cryotherapy
3 units for the product they're selling and
4 distributing.

5 Q Okay. And when did you conduct that review?

6 A Probably 2018 into 2019.

7 Q Okay. Do you recall what type of cylinder
8 that was?

9 A I believe those are all carbon dioxide,
10 liquid CO2.

11 Q Do you recall the pressures involved in
12 those cylinders?

13 A Not specifically, no.

14 Q Do you recall the amount of liquid or matter
15 inside of those cylinders?

16 A They're large. For dealing with dealers,
17 they're probably at least a hundred gallons; maybe
18 more.

19 (Marked for identification, Exhibit 2.)

20 BY MR. KIRKPATRICK:

21 Q Okay. Now, if you can look at Exhibit 2.
22 And when you have it open, if you can just scroll
23 through and confirm that this is the report that you
24 prepared for this case.

25 A Yes, sir. It appears to be the report.

1 It's -- my entire report would also encompass my CV
2 and my testimony list, but we already reviewed those
3 as Exhibit 1. So, yeah, this looks to be a copy of my
4 report up through page 11.

5 Q Okay. Did anybody assist you in writing
6 this report?

7 A No, sir.

8 Q Okay. And we mentioned the other experts
9 whose deposition testimony that you've reviewed. Do
10 you recall reviewing the written report for the other
11 experts in this case?

12 A The written reports of the experts that I
13 reviewed are listed in my file materials here.

14 Q Okay. And as relevant here, I understand
15 that your areas of expertise are warnings -- sorry.
16 Well, I'll finish the question -- are warnings and
17 communications pertaining to warnings and safety
18 communications. Do I have that right?

19 A Generally, yes. Safety communications
20 regarding warning and instructions, yes, sir.

21 Q Okay. So what I was going to say is I'll
22 just try to go through your report roughly in order,
23 but just let me know if you're ever not sure where I
24 am because I've been known to jump around a bit.

25 A Sure.

1 Q I'm reading this from page 1: "Warnings and
2 communications pertaining to warnings and safety
3 communications." Are those three different things, so
4 warnings, communications pertaining to warnings, and
5 safety communications?

6 A That sentence probably could have used a
7 little more editing, but yeah. Yes. It's really
8 warnings and safety communications regarding product
9 literature, so...

10 Q Okay. Can you just describe briefly the
11 difference between those two things, warnings and then
12 the safety communications?

13 A Sure. So usually typically for a lot of
14 products, there's going to be a significant amount of
15 product literature, but not all of it is safety
16 related. There may be some instructions to the user
17 with regard to performing certain steps or tasks, but
18 that may not have a safety implication related to
19 their safe interaction and use of the product.

20 So it's just an encompassing of all of the
21 communications that would generally be received by the
22 user from the manufacturer.

23 Q Okay. And am I right that you are not
24 offering opinions based on expertise in workplace
25 safety?

1 A Not in this matter, no, sir.

2 Q Okay. Or expertise on the fire protection
3 industry specifically?

4 A I think some of my opinions, to try to
5 address the criticisms of Mr. Juliano or Mr. Coelho,
6 may have reviewed some of those standards, but I don't
7 recall specifically citing any of those in my report.

8 Q Okay. So my question more generally is, do
9 you consider yourself an expert in the fire protection
10 industry?

11 A I certainly have reviewed and used NFPA
12 standards as it relates to other matters. I just
13 didn't cite any specific NFPA standards in my report
14 for this matter.

15 Q Okay. But in terms of the practices and
16 standards that apply to the fire protection industry,
17 do you consider yourself an expert in that
18 specifically?

19 A I think there's probably a subset of those
20 as it relates to the warnings and safety
21 communications aspect of standards as it relates to
22 fire protection or other NFPA standards generally
23 regarding what safety communications to the end user
24 would be both for litigation and non-litigation
25 circumstances.

1 Q Okay. On page 2 you note that during your
2 professional work experience, you have led safety
3 reviews for industrial processes. What are safety
4 reviews for industrial processes?

5 A Sure. So when I was working at BASF
6 Corporation, part of the safety reviews for the
7 facilities are -- you perform a process hazard
8 analysis. And then that process hazard analysis is
9 reviewed periodically, my recollection is every four
10 or five years, approximately, just to make sure
11 whatever modifications you made at the plant during
12 that time are still covered by the process hazard
13 analysis.

14 So you had an opportunity to look at the
15 whole safety system for the facility, from the raw
16 materials to the finished product and all of the
17 potential hazards within the plant. So it's quite an
18 endeavor to perform that activity as it relates to an
19 industrial chemical manufacturing facility. It
20 usually took me two months to do those reviews.

21 Q Okay. And so is that -- those safety
22 reviews took place over the seven years when you were
23 in manufacturing plants for industrial chemicals?

24 A Generally, yes, sir, yeah. So that would be
25 during the time when I was at BASF Corporation for the

1 facilities that I was working in at that time. If the
2 opportunity came up or it was time on the cycle for
3 their PHA to be reviewed, we'd perform that review.

4 Q And what years were those?

5 A I would say that -- I can't pinpoint
6 specific years, but probably at least three full-blown
7 reviews, PHA reviews, in the seven years; possibly
8 more.

9 Q Okay. Sorry. I meant, what were the seven
10 years?

11 A Sorry. That was during my period of
12 employment with BASF Corporation, so not necessarily
13 as of January 1999 but probably starting in fall of
14 2000 through the end of 2006.

15 Q Okay. How long -- you mentioned three
16 different reviews. How long does each review take?

17 A The way that we generally did them is we
18 would try to spend a fixed period of time, maybe a
19 week or two weeks, conducting the bulk of the review
20 and then trying to follow up on that over the next
21 couple of months. So it could just be a couple of
22 weeks. Generally, they stretched over months just
23 because it was hard to coordinate everybody's
24 schedules to get everybody back together.

25 And, of course, you didn't have the benefits

1 of teleworking like we do here. So people had to
2 physically come to the site. There was a period of
3 time they were bringing in people from off site to
4 help facilitate those reviews. So it was a lot of
5 moving parts.

6 Q Okay. And I apologize if you already said
7 this. What chemicals were involved in these plants?

8 A So that's quite a list. So the initial
9 plants that I went into brought in 1,4-Butanediol and
10 then converted that into an arranged structure called
11 tetrahydrofuran. And then at the same time we would
12 sell tetrahydrofuran commercially and then -- but the
13 bulk of that product went into manufacturing
14 polytetrahydrofuran.

15 So you're polymerizing the tetrahydrofuran
16 molecules to different molecular weights. And you
17 would know that as a component of spandex. So the
18 products that you have that have spandex in them
19 contain this polymer.

20 Q Okay. I'm sure Marcia really enjoyed that.

21 And so are all of those chemicals for
22 spandex that were at these industrial plants, or
23 that's just one application?

24 A That was just my first maybe
25 year-and-a-half, two years at the facility. And then

1 I went to work in a plant that primarily did corn
2 herbicide. So they were manufacturing a particular
3 corn herbicide in Beaumont, Texas. And it was going
4 to cost \$100 million to debottleneck the plant.

5 So as an alternative, we built a very
6 special chemical plant in Louisiana, which separated
7 the optically active from the optically inactive
8 amines. So we separated the right enantiomer from the
9 left enantiomer. And that allowed us to effectively
10 make twice as much herbicide at the chemical plant
11 because all of the optically active component, the
12 S-MOIPA, is the active ingredient in biological
13 systems reform.

14 So we could effectively make twice as much
15 corn herbicide if we only put through the S-MOIPA as
16 opposed to putting through a blend of the RS-MOIPA.

17 And then I transferred from there over to a
18 multiproduct in the east plant running High-Pressure 1
19 and High-Pressure 2. So that involved taking in a
20 variety of different raw materials, reacting them with
21 several different catalysts, and then using primarily
22 anhydrous ammonia to make amines. And that was
23 another business that was involved in the production
24 of those chemicals as well.

25 Q Much appreciated on that.

1 MR. KIRKPATRICK: Thank you, Marcia.

2 BY MR. KIRKPATRICK:

3 Q This hopefully will be a little bit easier
4 on Marcia.

5 You are, I understand, an affiliate
6 professor at Auburn?

7 A I believe so, yeah. I think that's still
8 current. I think that should be winding down here
9 shortly.

10 Q And what do you mean by "winding down"?

11 A I've done that for approximately eight, nine
12 years. So I think it's time to move on.

13 Q Sure.

14 Is that essentially an adjunct professor
15 role?

16 A It's really more of a support role where we
17 discuss our scientific research that we're doing here
18 with the faculty there and the faculty at UAB and try
19 to provide support for each others' research
20 generally.

21 Q Do you teach any courses -- I should say, as
22 an affiliate professor, do you teach any courses?

23 A No. I have not taught any courses as an
24 affiliate professor.

25 Q Okay. And you've mentioned before -- and I

1 see here that you serve on several American National
2 Standard Institutes Z535 subcommittees. What are your
3 responsibilities on those subcommittees?

4 A On the .3, .4, .5, .6 subcommittees, I'm
5 just a committee member. For the new .7 standard that
6 will be coming out, I'm the sub-chair for the .7
7 standard, for digital media.

8 Q And as a committee member, essentially what
9 does that entail, being a committee member?

10 A There's meetings every couple years.
11 Historically, they've been yearly, but more recently
12 they've been a little more infrequent with regard to
13 reviewing standards, considering change proposals, and
14 keeping the standards up-to-date and kind of reviewing
15 the standards as they relate to the current
16 literature, whatever changes may need to be made as
17 time moves forward.

18 Q Okay. So will you actually propose the
19 changes, or you review the proposals and -- both? Or
20 something else?

21 A Generally review the proposals and discuss
22 them at committee. And that could be full committee
23 with all the subcommittee members for all the
24 different standards who have chosen to attend the
25 meeting, or it could be via an email where it could be

1 a specific change request for us.

2 If there's a global change, usually it's
3 discussed in person at a meeting. If it's a very
4 finite specific change for a specific standard,
5 generally it's done within the subcommittee. That can
6 be done via email or teleconference.

7 Q Okay. And I understand that these
8 subcommittees promulgate voluntary consensus standards
9 concerning safety information. Given that these
10 standards are voluntary, what's the practical effect
11 of promulgating these standards?

12 A To try to provide a uniform visual system
13 for hazard communication in the United States. So
14 they've been adopted by a variety of different
15 industries over time, whether formally through
16 adoption through a UL standard or some other type of
17 standard or government regulations in some instances.

18 They're commonly referred to in litigation
19 as criticism by the plaintiffs if you don't follow a
20 standard. So manufacturers generally try to comport
21 with standards as it relates to their products to
22 effectively communicate their hazard communication.

23 Q Okay. Aside from this case, in the course
24 of your professional experience, have you ever dealt
25 with pre-engineered fire suppression systems before?

1 A I don't believe so, no, sir.

2 Q Okay. And we discussed the case involving
3 cryogenic -- although I don't remember if that was a
4 case or not. Other than that that we discussed, are
5 there any other experiences that you've had related to
6 compressed gas cylinders?

7 A Probably some propane cylinders, propane use
8 for consumers, whether it's a smaller cylinder or a
9 propane cylinder at someone's home or, you know, the
10 larger tanks that you may find at someone's home.
11 That's what I can recall sitting here right now.

12 Q Okay. But you can recall specifically what
13 those assignments were?

14 A What those assignments were, sir, as it --
15 well, for the propane it relates to the warnings and
16 safety communications from the manufacturer of the
17 cylinder to the end user.

18 Q Okay. And was that a litigation matter?

19 A Yes, sir. I've got at least one current
20 litigation matter in that regard, yes, sir.

21 Q Okay. And you said you've also had past
22 litigation matters involving propane cylinders?

23 A I believe so, yes, sir.

24 Q Okay. And do you recall, from those cases
25 or from the active case, what types of cylinders those

1 are? And by that I mean, what governed their
2 construction?

3 A My recollection is that there's ASTM
4 standards regarding the construction, but the physical
5 construction of the cylinders wouldn't be my area of
6 expertise, so...

7 Q Okay. Aside from what we've discussed with
8 respect to compressed gas cylinders, do you have any
9 professional experience with compressed gas systems?

10 A We talked about my non-litigation consulting
11 work for the cryotherapy units. There's that. We
12 talked about the propane cylinders litigation. I
13 can't specifically recall any others.

14 Q Okay. And those cases that you just
15 mentioned, those involve just the tanks or the
16 compressed air system as a whole?

17 A These involve the compressed propane as a
18 component of the tank and the system.

19 Q But your opinions for consulting work have
20 been related to the compressed gas cylinder or to
21 warnings about the system as a whole?

22 A I think those are specific to the cylinders
23 and the propane that is filled by the entity that
24 provides the cylinders for consumer purchase. For --
25 the other one that I can recall is the manufacturer of

1 the propane tank, the larger -- I'm going to call it
2 approximately 250-gallon tank that you'd see outside
3 of someone's home.

4 Q Sure.

5 Okay. In terms of your experience with NFPA
6 standards, how many cases or consulting arrangements
7 have you had that involve NFPA standards?

8 A Probably between 10 and 20.

9 Q Okay. Do you recall which standards those
10 were in those cases?

11 A So NFPA 1500 I think is the, what, standard
12 for training as it relates to firefighters. There's
13 several others that relate to training for
14 firefighters. There's some that relate to emergency
15 personnel. As it relates to automotive, applications
16 for electric or hybrid vehicles as it relates to
17 separated power.

18 There's several others that I've used over
19 the years. I just can't recall the numbers.

20 Q Sure.

21 Do you recall ever using NFPA 10?

22 A Not specifically prior to this matter, no,
23 sir.

24 Q Or 17 or 17A?

25 A Again, not specifically, not prior to this

1 matter.

2 Q Okay. Do you consider yourself an expert in
3 NFPA standards?

4 A As we discussed earlier, as it relates to
5 the safety communications, warnings and instructions
6 components of those standards, yes, I would consider
7 myself to have expertise as it relates to my
8 subspecialty. But, generally, outside of warnings and
9 safety instructions, that would not be my area of
10 expertise.

11 Q Okay. Have you in the course of your
12 professional experience had occasion to work with any
13 fire codes in any jurisdiction?

14 A Repeat.

15 Q The fire codes for any jurisdiction.

16 A I don't recall having a matter related to
17 fire codes for a particular jurisdiction, no, sir.

18 Q Okay. And what about your experience with
19 OSHA standards?

20 A I have significant experience with OSHA
21 standards as regulations as it relates to a variety of
22 topics, certainly not everything under OSHA. There's
23 a baking standard; there's a diving standard. I don't
24 consider myself experts in those regulations, but
25 there's significant portions of OSHA standards that I

1 rely upon for my work, yes, sir.

2 Q Okay. Can you just list as best you can the
3 areas of the OSHA standards where you consider
4 yourself an expert?

5 A I don't have a full list of all the OSHA
6 regulations here in front of me, so I wouldn't be able
7 to do that as I sit here.

8 Q Okay. Have you ever taught, whether a
9 course or instructions or anything else or training,
10 related to the OSHA standards?

11 A In part. I've given a webinar. And I gave
12 a talk to the State Bar of Georgia regarding chemical
13 hazard communication. So that would be an area as it
14 relates to OSHA that I have given or taught
15 professional development courses in.

16 Q Okay. Any other courses or webinars or
17 trainings?

18 A Well, my doctoral dissertation is about GHS
19 hazard communication as it relates to OSHA prior to
20 the adoption of the Globally Harmonized System by OSHA
21 in 2012.

22 Q And then prior to this case -- or I should
23 say, other than this case, do you have professional
24 experience with the Compressed Gas Association
25 standards?

1 A A little here and there, yes, sir. Yeah, as
2 it relates to the propane matters we discussed
3 previously and the non-litigation work for the
4 cryotherapy.

5 Q Okay. Do you recall which standards those
6 would be?

7 A I think we touched on standards that we were
8 referencing here as it relates to compressed gases as
9 it relates to those materials.

10 Q Okay. Those are the ones that you cite in
11 your report?

12 A Yes, sir. And I have referenced other
13 Compressed Gas Association standards over time. I
14 just don't recall the specific numbers.

15 Q Okay. On page 2, continuing on to page 4,
16 is your list of materials reviewed. Are you relying
17 on any material that are not listed here in forming
18 your opinions? And I will except the references at
19 the end and the other kind of sources that you cite.

20 A I think that generally would encompass the
21 materials I'm relying upon as it relates to this
22 matter, my study of the human factors and warnings
23 literature and OSHA regulations, NFPA standards,
24 included in all that. So I think that generally
25 encompasses the materials that I would rely upon as it

1 relates to this matter.

2 Q Okay. Are there any specific materials that
3 come to mind that are not listed here that you are
4 relying on?

5 A Not specifically that I can recall, no.

6 Q Okay. So other than on page 11 -- is your
7 references -- other than these references and
8 references cited elsewhere in your report, are you
9 relying on any other treatises or academic articles to
10 support your opinions?

11 A Not specifically. Just my knowledge of the
12 human factors and safety communications literature in
13 general, in addition to the specific materials I've
14 listed here in the references section of my report.

15 Q Have you actually reviewed all of the
16 documents and materials listed in your list of
17 materials reviewed?

18 A For the most part. I probably didn't read
19 the entirety of every deposition. Usually we have
20 annotations of the depositions prepared by someone in
21 my office. So I'll review the annotations of the
22 deposition so I don't have to sit down and read the
23 entirety of the deposition.

24 Q Okay. Do you have the annotations of the
25 depositions like on your computer or elsewhere?

1 A Yes, sir. We have our case summary
2 analysis, which encompasses the annotations of the
3 depositions, yes, sir.

4 Q Okay. I would ask that you preserve the
5 case summary analysis. We may ask Ms. Fappiano for a
6 copy of that. So we'd just ask that you preserve it.

7 A Of course.

8 Q Okay. And your expert disclosure, which is
9 Exhibit 2, this contains every opinion that you plan
10 to offer at trial; right?

11 A I believe so, yes, sir.

12 Q Okay. And the basis -- rather, the bases
13 and the reasons for your opinion as well; right?

14 A Yes, sir. And the bases for my opinions are
15 expressed in my report, yes, sir.

16 Q Okay. And between your qualifications
17 section and your CV that you provided, those are the
18 qualifications that you rely on in expressing your
19 opinions?

20 A Yes, sir.

21 Q Okay. Have you conducted any other analyses
22 in this case that are not reflected in your report?

23 A I don't have anything that I've
24 memorialized. I just have my opinions as they're
25 listed in this report.

1 Q Okay. But in terms of whether memorialized
2 or not, are there any other specific analyses that
3 you've undertaken that are relevant to this case that
4 are not in the report?

5 A I don't believe so. I think we've covered
6 the materials that I reviewed, and we'll get into the
7 bases for my individual opinions.

8 Q Okay. Do you have any intention of
9 conducting any other analyses or reviews before
10 testifying at trial?

11 A At this time, no, sir.

12 Q Do you have any plans to amend or supplement
13 your report?

14 A Not at this time.

15 Q Okay. Why don't we take a quick break, five
16 minutes, if that's okay, and come back at 12:10? Does
17 that sound good?

18 A Okay.

19 (Whereupon, a recess was taken.)

20 BY MR. KIRKPATRICK:

21 Q Dr. Boelhouwer, on page 5 you provide a
22 definition of human factors engineering. And you say
23 that "the academic field of human factors engineering
24 is the scientific discipline concerned" -- and I won't
25 read the whole thing. Is that definition the commonly

1 accepted definition of human factors engineering in
2 the field?

3 A I think the quote on page 5 from Chapanis
4 would be a fair, commonly accepted definition of human
5 factors, yes, sir.

6 Q Okay. And with respect to that definition,
7 it says, "Human factors is a body of information about
8 human abilities," et cetera, et cetera. What is that
9 body of information that comprises human factors?

10 A So it's the scientific literature regarding
11 human capabilities and limitations. So it can be
12 reach arcs. It could be physical ergonomics. It
13 could be seated eye height. So those are physical
14 characteristics of individuals based on a variety of
15 different considerations. Obviously, there's a
16 distribution. So those would be one aspect.

17 And then the cognitive side as it relates to
18 warnings and instructions. So the scientific
19 literature with regard to behavioral responses to
20 warnings is just a subset of the overall human factors
21 literature.

22 Q Okay. Does that include information on
23 human psychology?

24 A Yes, sir.

25 Q Is it a subset of human psychology, or does

1 it encompass the whole field?

2 A They're going to have some overlap here as
3 it relates to behavior related to human-product
4 interaction and the processing of saving information
5 but certainly not into whole other areas of psychology
6 so that the two fields do touch. But, you know, it's
7 just -- there's some overlap of that diagram.

8 Q Okay. So is the standard for determining
9 whether something is human factors whether the
10 information is specifically about human abilities,
11 human limitations, and other characteristics that are
12 relevant to design?

13 A Could you repeat that?

14 Q Sure. I'll rephrase.

15 So I'm just trying to figure out how you
16 differentiate between academic work that's human
17 factors engineering and outside of human factors
18 engineering. So is it -- no matter the discipline,
19 it's the information involves human abilities, human
20 limitations, and other characteristics, and those are
21 relevant to design, that that counts as human factors?

22 A I think that's pretty fair, yes. So it's
23 really the human-product interaction. So whatever is
24 involved with the human and the system as however
25 you're going to apply the system and whatever that

1 interaction is, that's the study of human factors; so
2 how the system and -- how the human interacts with the
3 system.

4 Q Okay. And then a couple paragraphs down,
5 after the heading Warnings Research, I'm looking at
6 that first sentence. It says, "Since the design of
7 safety communications and the systematic analysis of
8 responses to those communications is an aspect of
9 human factors engineering, many of the studies are
10 recorded in the human factors engineering literature."

11 What do you mean by "many of the studies"?

12 A Well, some studies could -- as you suggested
13 earlier, could be in the psychology literature or
14 maybe you could find some marketing literature. So it
15 may not be specifically confined just to the human
16 factors publications by the Human Factors and
17 Ergonomics Society. So it could be broader than that.
18 There may be some in the industrial engineering
19 literature, some in the psychology literature. So it
20 just depends on the source the authors try to get
21 their work published in.

22 Q Okay. And then you cite here to McCarthy,
23 DeJoy, Ayres, and Rogers. And my question is, are
24 those reviews authoritative in the field of human
25 factors?

1 A I would say generally. You know, I may not
2 agree with every sentence that's in each of those
3 publications. But, generally, those are reviews of
4 scientific literature, and I think they're
5 representative of the literature as it existed at the
6 time of the review and they're on the whole a fair
7 representation of the literature at the time those
8 reviews were written, yes, sir.

9 Q Okay. And then jumping ahead to the list of
10 references that you have at the end, are these
11 references that individuals in the field of human
12 factors frequently rely on in conducting an analysis?

13 A I would say generally as it relates to human
14 factors and warnings and instructions, this is a
15 representative list of literature. Obviously, there's
16 thousands of articles, but this is a relatively decent
17 subset, yes, sir.

18 Q Okay. Can you just describe generally your
19 methodology in this case?

20 A Sure. My methodology is to review the
21 deposition transcripts, the exhibits attached to
22 those, the relevant standards or the standards
23 referenced by others, the reports of the other
24 experts, and then from that come up with my opinions
25 as it relates to the matter and the specific areas I'm

1 asked to opine about.

2 Q Okay. Of the standards that you referenced,
3 are any of those ambiguous or vague in your opinion as
4 it relates to this case?

5 A There seems to be a question between some of
6 the other experts as it relates to the applicability
7 of some NFPA standards or portions of NFPA standards.
8 I don't think those really weigh in upon my opinions.
9 They're a disconnect between the other experts. But
10 it seems that there is some potential issue conflict
11 between the experts as it relates to the materials
12 they believe are applicable to the test tank.

13 Q Okay. But as it relates to your opinions,
14 do you believe that any of the standards that you rely
15 on are vague or ambiguous?

16 A As it relates to the OSHA Hazard
17 Communication Standard and the Compress Gas
18 Association standards, I don't believe that they're
19 ambiguous, no, sir.

20 Q Okay. The methodology you described, is
21 that drawn from a standard somewhere, or is there a
22 document that I could go to to find a description of
23 that methodology?

24 A There is not a specific methodology as it
25 relates to human factors as it relates to the

1 development of expert opinions in the field of human
2 factors. I am aware that other standards bodies have
3 attempted to produce documents like that. But there's
4 not one that applies specifically to human factors.

5 Q Okay. Is there any way to determine whether
6 your opinions are right or not? Is there any way to
7 test your conclusions?

8 MS. FAPPIANO: Objection to form.

9 A I think that the opinions are addressing the
10 criticisms of others and some potential
11 misrepresentation or misunderstanding on their behalf.
12 So I think the opinions provide some clarity to the
13 issues raised by the other experts.

14 BY MR. KIRKPATRICK:

15 Q But in terms of your methodology, is it
16 testable in any way?

17 MS. FAPPIANO: Objection to form.

18 A Could we define a test somehow? Possibly.
19 But I think, generally, since I'm opining about the
20 standards and the statements in the standards and the
21 their applicability as it relates to Oprandy's fire
22 and safety, I can't think of a specific test that you
23 would apply as it relates to this matter for these
24 opinions.

25 BY MR. KIRKPATRICK:

1 Q Okay. I believe you state that your
2 opinions are to a reasonable degree of scientific
3 certainty; is that right?

4 A In the field of human factors and safety
5 communications, yes, sir.

6 Q And how would you define that standard?

7 A More likely than not.

8 Q Okay. So I'm on page 6. But I just want to
9 talk generally about OSHA regulations. And I know
10 obviously you mentioned there are a lot of them. But,
11 bird's-eye view, OSHA creates standards and
12 regulations that affect the workplace; right?

13 A Yes, sir. It's Occupational Safety and
14 Health Administration, so it's focused on the
15 workplace, yes, sir.

16 Q And is it fair to say that most employers
17 have to follow OSHA standards?

18 MS. FAPPIANO: Objection to form.

19 A I think it's fair to say most private
20 enterprises would fall under -- whether it's a state
21 plan or federal, OSHA, obviously, there's some
22 exceptions, but, generally, yes, OSHA would be
23 applicable to most private businesses.

24 BY MR. KIRKPATRICK:

25 Q And if an employer fails to follow the OSHA

1 regulations, OSHA can cite them for violations; is
2 that right?

3 A That is one means by which OSHA has to
4 address potential deficiencies found at an employer
5 work site.

6 Q And do we agree that Oprandy's is subject to
7 the OSHA standards in its capacity as an employer?

8 A I think that's fair, that OSHA would be --
9 that Oprandy's would fall under businesses that would
10 be addressed by OSHA, yes, sir.

11 Q Okay. And OSHA has regulations governing
12 the handling of hazardous materials; is that right?

13 A Yes, sir.

14 Q And within that set of regulations, there
15 are regulations on compressed gases; is that right?

16 A Yes, sir. There are some OSHA regulations
17 that relate to compressed gases, yes, sir.

18 Q And those regulations incorporate by
19 reference CGA pamphlet P-1; is that right?

20 A I believe that's correct. But back to
21 the -- I think it's the 1965 version, so not the most
22 current version but the historical version. I believe
23 that's correct.

24 Q Okay. And you're aware, though, that that
25 1965 version -- you may have just said this -- has

1 been replaced by a subsequent version?

2 A But I don't believe the OSHA regulation has
3 been amended to adopt the subsequent revisions.

4 Q Right. But I'm asking whether the CGA has
5 replaced the 1965 version of that pamphlet with a
6 subsequent version of that pamphlet.

7 A That's my understanding, yes, sir.

8 Q Okay. And that pamphlet is a standard for
9 safe handling of compressed gases in containers?

10 A Yes, sir.

11 Q Okay. And do you agree that the standards
12 for the safe handling of compressed gases in
13 containers apply to Oprandy's?

14 A To a certain extent, yes, sir, that they are
15 in the process of transfilling cylinders of compressed
16 gases, so they're -- so some of it is applicable to
17 them, yes, sir.

18 Q Okay. And I notice -- I don't know if I saw
19 it right. Did you just grab something to reference?

20 A Yeah. I grabbed the CGA P-1, 2015.

21 Q Okay. I just want to be clear what we're
22 referencing. And I would ask if you reference that
23 for an answer, if you could just clarify that you were
24 reviewing it. That would be very helpful.

25 A Sure.

1 Q Okay. And do you agree that, as defined by
2 the CGA, Oprandy's was the, quote/unquote, "gas
3 supplier" for purposes of the test tank?

4 A That's really a little bit outside of my
5 area as it relates to the warnings and safety
6 communications on the test tank itself. But I would
7 say that Oprandy's falls under -- and I'm reviewing
8 the document that we just referenced -- page 8 of
9 Compressed Gas Association CGA P-1, 2015, under
10 Section 5.7 for transfilling.

11 It addresses two circumstances. One can be
12 the gas supplier or by other personnel who are -- and
13 I'm just going to read from the standards -- quote,
14 "trained in and use equipment designed for this
15 purpose and trained in and follow written operating
16 procedures that include the precautions necessary to
17 avoid the products' hazards and that comply with
18 government standards and regulations."

19 Q And so my only question is whether -- and I
20 think you answered it -- under this standard whether
21 Oprandy's is a gas supplier with respect to the test
22 tank. And am I right that you are saying that that is
23 outside of the scope of what you're opining on?

24 A I think it's outside the area of my opinions
25 that I have addressed in my report and that there's an

1 exception under Section 5.7 for transfilling that
2 would address that Oprandy's is not the actual
3 supplier of the gas because they're not the
4 manufacturer but that they have personnel who are
5 intended to meet the sub-bullets of that Section 5.7
6 for transfilling their -- transfilling material from
7 one container to another container.

8 Q So you're saying that Section 5.7 creates an
9 exception to the definition of gas supplier?

10 A I'm saying Section 5.7 addresses suppliers
11 and also another category of personnel who can be --
12 so outside of being a supplier that they're personnel
13 who would be involved with the transfilling, or the
14 transfer, of gases from one container to another.
15 That seems to be more applicable to Oprandy's and
16 their personnel as it relates to this matter.

17 Q But you do not contend that Section 5.7
18 purports to alter the definition of gas supplier?

19 A It says gas supplier or by personnel who are
20 trained effectively.

21 Q Yeah.

22 A So it addresses two circumstances.
23 Oprandy's, not the manufacturer selling compressed
24 gases -- or selling compressed air to end users, that
25 they are effectively the end user of the gas and that

1 they are transferring it from one container to another
2 container for their purposes, they don't necessarily
3 seem to fully meet the definition of supplier as it
4 relates to CGA P-1, 2015.

5 Q And your basis for that opinion is what's
6 set forth here in 5.7?

7 A And also as the definition of supplier as
8 defined earlier in the standard.

9 Q And because you believe that the definition
10 of supplier requires that the cylinder be sold to
11 qualify as the gas supplier; is that right?

12 A Referencing page 4 of the standard, there's
13 a definition for transfilling. So that's 3.2.30.
14 "Transfer of cryogenic liquid and/or compressed gas
15 from one container to another." Then we've got
16 3.2.32. "User. Individual, group, or business entity
17 that uses the containerized gas in a non-propellable
18 manner." So that would be applicable to Oprandy's as
19 it relates to the test cylinder. They would be a
20 user. They're not able to recover the gas --

21 And then on the previous page, page 3, we
22 have a definition of gas supplier, 3.2.15. "Gas
23 supplier. Business that produces, fills, and/or
24 distributes compressed gases." As it relates to
25 Oprandy's, my understanding is they don't necessarily

1 produce these materials and they're not distributing
2 them by means of selling compressed air to others.

3 So the only portion of gas supplier that
4 would be applicable are these fills, and that really
5 seems to be addressed by transfilling and the
6 exception identified under Section 5.7 for
7 transfilling as it relates to personnel who can be
8 trained who would not qualify as a gas supplier.

9 Q Okay. So you believe that the definition of
10 fill as it's defined in the context of the gas
11 supplier definition is limited by this transfilling
12 section?

13 A I think the gas supplier definition
14 encompasses manufacturing and distribution and
15 filling, so that seems to be much more encompassing of
16 an enterprise than to be applicable to Oprandy's as it
17 relates to this matter.

18 Oprandy's is really transfilling generally
19 from one container to another container for purposes
20 of pressurizing the container with a given gas. As it
21 relates to this matter, it's compressed air. So
22 they're transferring from one vessel to another.

23 So transfilling really seems to be a better
24 fit for what their actual activity is and that they
25 are -- under 5.7 it addresses both gas supplier and

1 personnel who are trained to transfer the material
2 from one cylinder to another. So it seems that
3 transfilling fits Oprandy's business and their
4 activities appropriately.

5 Q Okay. Do you agree that transfilling is a
6 type of filling?

7 A Transfilling certainly is a type of filling,
8 yes, sir, taking material from one vessel and putting
9 it into another vessel, yes, sir.

10 Q Okay. Do you contend that any other entity
11 was the, quote/unquote, "gas supplier" with respect to
12 the test tank other than Oprandy's? And, obviously,
13 I'm not saying that you are saying that they were.

14 A The only other thing under the transfilling
15 is it addresses the supplier of the transfill
16 equipment, so that would be Poseidon as it relates to
17 this matter.

18 Q Turning back to your report, I believe I am
19 on --I think I'm still on page 6. You state that
20 the -- well, you state that the requirements under the
21 OSHA HazCom standard would generally comport with the
22 guidance in the Compressed Gas Association P-1, 2015.
23 My question is what you mean by "generally comport
24 with."

25 A So OSHA outlines that you have to address

1 the hazards of -- the nature of the hazards of the
2 contents of the cylinder. The Compressed Gas
3 Association has provided -- has adopted the OSHA
4 framework for doing that type of analysis. And they
5 have provided, using the OSHA terms and the OSHA
6 guidance, the applicable or the relevant statements
7 and collected them, giving it a signal word, and
8 advised that it should use -- 50 gram, needed -- as it
9 relates to compressed air.

10 So OSHA kind of gives us the framework. The
11 Compressed Gas Association has taken it one step
12 further, compiled all the relevant information as it
13 relates to compressed air and given the statements
14 that should appear on the label for compressed air to
15 the reviewer or reader of the Compressed Gas
16 Association standard.

17 Q You don't contend that the HazCom standard
18 replaces or otherwise limits the requirements set
19 forth in CGA P-1, 2015, do you?

20 A I can't think of a specific circumstance
21 that it would. I mean, obviously, OSHA would be the
22 regulatory authority, so that wouldn't trump the
23 standard, in my mind, if there was some type of
24 conflict between the two.

25 But as it relates to this sub-section as it

1 relates to the hazards associated with compressed air,
2 it seems that the CGA is kind of doing the work for
3 the reader by consolidating the appropriate statements
4 and providing them to the reader for their use for
5 cylinders of compressed air.

6 Q You state that -- well, is it your opinion
7 that Oprandy's had an obligation to label its tanks
8 with respect to potential chemical hazards?

9 MS. FAPPIANO: Objection to form.

10 A I think that's fair as it relates to the
11 content of the tank with the intent that, at least in
12 this circumstance, that it was going to be filled by
13 one individual and then get into another individual
14 and then transported to the site where the material
15 would be consumed.

16 So as it relates to contents of the tank
17 itself, it would be reasonable and appropriate for
18 Oprandy's to label the tank as it relates to
19 compressed gas, as identified in CGA P-1, 2015.

20 BY MR. KIRKPATRICK:

21 Q What is a potential chemical hazard?

22 A They could be numerous hazards. They could
23 be either physical or as it relates to flammability.
24 Or there could be a variety of different potential
25 hazards as it relates to short-term exposure,

1 long-term exposure, flammability explosivity. So
2 there's a wide variety as it relates to chemical
3 products.

4 (Interruption. Off the record.)

5 BY MR. KIRKPATRICK:

6 Q I believe I asked what --

7 MR. KIRKPATRICK: Did you, Marcia, get
8 to the question of what a potential chemical
9 hazard is?

10 THE REPORTER: Yeah.

11 MR. KIRKPATRICK: Okay.

12 BY MR. KIRKPATRICK:

13 Q And so my next question is whether the
14 potential for gas to rapidly expand, does that pose a
15 chemical hazard?

16 A It depends on the circumstances. If you
17 have compressed air outside, if you release compressed
18 air into the general environment, there's probably
19 very little concern you would have as it relates to
20 that. If you're releasing some other type of
21 material, yes, you could be very concerned about the
22 circumstances, so...

23 Q So in terms of identifying the chemical
24 hazards that you are required to label, how do you
25 make the decision of whether that hazard is

1 sufficiently dangerous to warrant a label?

2 A So that's spelled out in the HazCom standard
3 as it relates to the individual chemicals. And then
4 the hazard statements and the precautionary statements
5 are all in the HazCom standard based on the
6 characteristics of the material.

7 Q Okay. So with respect to the chemical
8 hazard for the rapid expansion of gas, it's
9 context-specific whether a warning is required?

10 A As it relates to the rapid expansion of a
11 gas, it's going to depend, yes, on the material, on
12 the circumstances, on the actual pressures involved
13 and potentially other characteristics of the material
14 itself. So if the material is flammable, that's
15 probably a much different consideration than if it's
16 not flammable.

17 Q Okay. And when you say that Oprandy's would
18 only be responsible to provide labeling for chemical
19 hazards, are you saying that there are other types of
20 hazards that they are not responsible for labeling?

21 A As it relates to this matter and the test
22 tank, Oprandy's would effectively need to communicate
23 about the contents of the testing, whether it's
24 compressed air or it's nitrogen and provide those
25 safety communications regarding the potential hazards

1 associated with the contents of the container under
2 the guidance given by OSHA and the Compressed Gas
3 Association.

4 Q And are they required to warn against
5 potential physical hazards of the test tank related to
6 the contents?

7 MS. FAPPIANO: Objection to form.

8 A So as I understand your question, if the
9 contents of the tank were released and there's a
10 physical hazard associated with the release of the
11 material? Is that --

12 BY MR. KIRKPATRICK:

13 Q Yeah.

14 A So then as it relates to the -- potentially
15 there's some safety implications depending on the
16 material that may need to be communicated about the
17 material itself, the physical characteristics or the
18 potential hazards associated with the material, yes,
19 sir.

20 Q Okay. And this is all spelled out in the
21 HazCom regulations?

22 A And also in the Compressed Gas Association
23 standard as well, yes, sir.

24 Q Okay. So are you familiar with -- and I
25 don't know whether you cite it or not -- CGA Pamphlet

1 C-7? You do cite it.

2 A Yes, sir.

3 Q Do you agree -- and I guess I'll ask, are
4 you looking at that standard right now?

5 A No. I didn't pull that out yet, but I can
6 grab it.

7 Q You may not need to, but we'll see.

8 Again, like the P-1 standard, do you agree
9 that the C-7 standards apply in conjunction with the
10 OSHA HazCom standards?

11 A To the extent that the employer is
12 communicating contents of the container, yes, sir.

13 Q But I guess what I'm asking is, the OSHA
14 standards do not supplant or replace the C-7
15 standards; right?

16 A No. The OSHA standard would be over
17 everything. And then the Compressed Gas Association
18 is providing industry-specific guidance as it relates
19 to labeling for the P-1 standard. So it's a
20 supplemental resource for users to have information
21 that they need to appropriately label for the contents
22 of the containers that they are filling.

23 Q Okay. Do you agree that the C-7 standards
24 were developed in part to give guidance on how to warn
25 of physical and health hazards for compressed gas

1 cylinders?

2 A Hold on. Let me pull it out.

3 Q Sure. Just for the record, are you looking
4 at the 2014 version?

5 A Yes. I think -- that's the version I have,
6 2014.

7 Q Okay, great.

8 A Okay. So P-1 is the standard for addressing
9 the safe handling of compressed gases in containers,
10 so that's the handling. And I apologize. I may have
11 misstated a previous answer, but C-7 is the guide to
12 classification and labeling of the compressed gases.
13 So that's where you find the specific guidance as it
14 relates to the guidance for the compressed air
15 cylinder.

16 So I reference that at the beginning of my
17 report. So I may have misspoken earlier.

18 Q And this standard was developed in part to
19 give guidance on how to warn of physical and health
20 hazards for compressed gas cylinders; is that right?

21 A Yes, sir.

22 Q Okay. And do you agree that the C-7
23 standard places the responsibility to ensure that
24 labels adequately warn of physical hazard on the gas
25 supplier?

1 A As it relates specifically to the contents
2 of the cylinder, the chemical being filled, or the
3 potential hazards associated with the contents of the
4 cylinder, yes, sir.

5 Q And when you say "the contents of the
6 cylinder," are you drawing a distinction between that
7 and other types of hazards?

8 A Yes, sir. As it relates to any type of
9 limitations as it relates to the cylinder itself for
10 the valving or the subcomponents in use to assemble
11 the cylinder, those would not fall under the
12 Compressed Gas Association CGA C-7 as it relates to
13 employers and filling of chemicals.

14 Q And what is the basis for that limitation?

15 A I can review the introduction and scope
16 and -- page 1, No. 2. Scope defines the -- or
17 provides the basis for the -- it's giving general
18 principles for labels and markings and gives
19 recommended minimum requirements for hazardous gases
20 and selected liquids. And then the next paragraph,
21 the methods of preparing label information established
22 by GHS as required by Title 29 of the U.S. Code of
23 Federal Regulations.

24 Q You don't need to read the whole thing. But
25 it's in the scope -- the introduction and the scope

1 section?

2 A Yeah. That introduction and the scope
3 Section, pages 1 -- yeah, it's page of the CGA-7,
4 2014.

5 Q Okay. And are you basing your opinion on
6 anything other than what's on this page essentially?

7 A Well, the OSHA HazCom standard, which is
8 addressed as part of that page. So it addresses the
9 hazards associated with the contents of the cylinders
10 or the material being filled into the cylinders. So
11 that's kind of what's addressed by the standard.

12 Q Okay. Do you believe that -- we discussed
13 P-1. Do you agree that Oprandy's is subject to the
14 requirements of CGA C-7?

15 A To the extent that the -- as the employer
16 they should be labeling or need to be labeling the
17 cylinders as they're related to the contents and the
18 characteristics and the potential hazards of materials
19 they're filling into the cylinders, yes, sir.

20 Q Okay. And turning back to your report,
21 still on page 6, I just want to discuss your
22 understanding of how the test tank was going to be
23 used that day. Is it your understanding that
24 Mr. Scott asked his employee to fill the tank? Do I
25 have that right?

1 A That is my understanding, that Mr. Scott
2 requested Mr. Foust to fill the cylinder so he could
3 take it off-premises later that day, yes, sir.

4 Q Okay. And do you agree that neither
5 Mr. Buono nor Mr. Foust is going to be involved in the
6 test off-site that day?

7 A That's my understanding, that only Mr. Scott
8 would be involved in the off-site test that day.

9 Q Okay. And do you recall from the OSHA
10 report that the tank was repeatedly filled and
11 refilled at Oprandy's?

12 A Over what period of time? Over years and
13 years?

14 Q Just in general.

15 A I think that's fair. It was my
16 understanding Mr. Scott used this tank and other
17 tanks, similar tanks, on multiple occasions to perform
18 these off-site tests.

19 Q Okay. And you note here that the subject
20 cylinder was intended to be filled with compressed
21 area and discharged during the same work shift by
22 Oprandy's employees. My question is, what effect, if
23 any, does this have on Oprandy's obligations to label
24 the cylinder?

25 A That they're taking the cylinder and filling

1 it and transferring it between employees and taking it
2 off-site, transporting it to another location, it
3 certainly seemed that the cylinder would have to be
4 labeled under the OSHA HazCom standard as it relates
5 to the chemical hazards associated with the contents
6 of the cylinder.

7 Q Okay. But you're not saying that because it
8 was transferred between employees that that creates
9 some kind of exception to labeling requirements that
10 they otherwise would be subject to?

11 A No. The only exception, hypothetically,
12 would be under a circumstance where the individual who
13 fills the vessel and then would use the vessel at the
14 same site within the same work shift, so they're in
15 control of the vessel the entire time.

16 There's an exception under OSHA for if
17 you're the same shift, same person, that if you -- if
18 you're in control of the vessel the entire time, then
19 you wouldn't have to necessarily provide this
20 labeling. But because there's a transfer, because
21 it's going to be transported off-site, the vessel, as
22 it relates to chemical hazards, would have to be
23 labeled under the OSHA HazCom standard.

24 Q Okay. We are now moving on to page 7, I'm
25 happy to say. You state after the bullet point that

1 you disagree with Tyco's experts because there is not
2 a basis in the applicable OSHA regulations or the
3 Compressed Gas Association standard that an employer
4 would have to provide different or additional
5 warnings. Different or additional to what?

6 A Anything beyond what is defined in the OSHA
7 HazCom standard as it relates to compressed air and
8 what was referenced in CGA C-7 as the -- addressing
9 the contents of the material that's inside the
10 cylinder.

11 Q Okay. And so the applicable OSHA
12 regulations that you refer to are the HazCom
13 standards?

14 A Yes.

15 Q And the CGA, those are what we just
16 discussed, the P-1 and C-7?

17 A Yeah. Primarily C-7 as it relates to OSHA
18 and HazCom.

19 Q Okay. And you say that -- well, you mention
20 the expected use of the cylinder as a test tank. What
21 do you mean by that, the expected use of the cylinder
22 as a test tank?

23 A That's my understanding of what the intended
24 use of the subject cylinder is, to be used as a test
25 tank for these tests such as Mr. Scott was intending

1 to perform on the afternoon of the subject incident.

2 Q Okay. So you're saying that there was no
3 obligation for Oprandy's to label the tank to describe
4 what the expected use of it would be?

5 A My opinion is that they would only be
6 responsible for the labeling as it relates to the
7 contents of the tank itself, so the chemicals they
8 chose to fill the tank with. They're responsible to
9 provide the labeling and the communications as it
10 relates to the contents of the tank itself. So I hope
11 that addresses your question.

12 Q I'll try to ask it a different way. I guess
13 really what I'm asking is what do you mean by -- well,
14 never mind.

15 Is it your opinion here in this paragraph
16 that's after the third bullet point that there was no
17 obligation for Oprandy's to provide warnings regarding
18 the -- basically that the test tank was going to be
19 used as a test tank?

20 A Yeah. I think it's really just limited
21 to -- my opinion is limited to they would be
22 responsible to provide warnings and safety
23 communications related to the contents of the
24 cylinder, make sure it's appropriately labeled with
25 the OSHA HazCom standard for that so when it's used

1 off-site -- transported off-site that cylinder is
2 appropriately labeled under the HazCom standard.

3 Q So what do you mean by regarding the
4 expected use of the cylinder as a test tank?

5 A So my understanding of the expected use of
6 the test tank is to be taken off-site, connected to a
7 system, Tyco system that (Zoom glitch) --

8 (Reporter clarification.)

9 A -- connected to a system off-site to perform
10 the balloon test. They would discharge the contents
11 of the cylinder as part of this off-site test.

12 So the HazCom standard and the CGA 7
13 standard provide what the employer should label for
14 regarding the contents of the tank. And that would be
15 the extent of their warnings and safety communications
16 that would be the responsibility of Oprandy's as it
17 relates to this matter.

18 BY MR. KIRKPATRICK:

19 Q Okay. And I guess what do you mean by --
20 what would a warning regarding the expected use of the
21 cylinder as a test tank be?

22 MS. FAPPIANO: Objection to form.

23 A I think to the extent that Mr. Taranto --
24 Taranto (different pronunciation) -- expresses that
25 there should be some different or additional safety

1 communications on the tank that that would not be the
2 responsibility of Oprandy's under the applicable
3 regulations and standards as it relates to their
4 employer responsibility.

5 So the employer is responsible for
6 addressing the chemical contents of the tank and the
7 hazards associated with that. Anything beyond that
8 would not be the responsibility of the employer.

9 BY MR. KIRKPATRICK:

10 Q Okay. Do you have an opinion as to whether
11 anyone was required to provide a warning regarding the
12 expected use of the cylinder as a test tank?

13 A It not -- it's kind of outside the area of
14 my analysis. I think the -- my opinion really is
15 focused on that Oprandy's had certain responsibilities
16 under the HazCom standard and CGA 7 to provide safety
17 communications regarding the contents of the tank.
18 Any other criticisms as it relates to what should have
19 been on the tank or labeling would not be addressed
20 appropriately by Oprandy's. That would be
21 appropriately addressed by the manufacturer of the
22 tank assembly, which would not be Oprandy's in this
23 matter.

24 Q Okay. Turning to page 8 -- well, actually
25 no. I think it actually might be on page 7. My

1 question is why an entity selling kitchen fire
2 suppression equipment would be in the best position to
3 evaluate the risks created by the tank.

4 A Well, they are the manufacturer of the test
5 tank itself. So they have taken components from a
6 variety of suppliers, and they have created a new
7 product.

8 So as the manufacturer or the assembler of
9 those component parts, they're in the best position --
10 and they're selling this tank as well. So they're in
11 the best position -- should there be different or
12 additional safety communications that should be
13 provided, that would be the entity that would be best
14 suited to have a consideration of what safety
15 communications may or may not be need to be provided
16 on the tank if necessary.

17 So they chose to identify these test tanks,
18 you know, segregating them from other types of tanks
19 that they manufacture. They're painting the top-half
20 version. So there's one way that they're indicating
21 this tank is different than the others.

22 So to the extent that they are making that
23 decision, they are the entity that would be best
24 suited to evaluate should any different or additional
25 safety communications be necessary, and they would be

1 the entity that would have to make that determination.

2 Q And with respect to this accident in
3 particular, is your opinion just that Tyco is in a
4 better position than Oprandy's or a better position
5 than any other manufacturer with respect to safety
6 warnings?

7 A As we're focusing just on the tank itself,
8 that Tyco as the assembler of the component parts to
9 make the test tank would in the best position to
10 evaluate should any different or additional safety
11 communications need to be provided on the test tank if
12 necessary.

13 So that would -- now, that's separate from
14 the contents of the tank that's being filled by
15 Oprandy's. That's governed by OSHA adjusted to
16 CGA C-7. So that would encompass what the scope of
17 Oprandy's responsibilities would be. Should there be
18 other safety communications provided on the tank
19 itself, that would not be the responsibility of
20 Oprandy's to make that determination.

21 Q And that's based on the regulation that you
22 just discussed or on their position vis-a-vis being in
23 the best position to provide warnings?

24 A I think there's certainly guidance from OSHA
25 as it relates to the HazCom standard that Oprandy's is

1 the entity that needs to provide the safety
2 communications as it relates to contents of the tank.

3 Should any different or additional warnings
4 need to be provided on the subject cylinder, that
5 would not fall within the purview of Oprandy's but
6 that as the assembler of the components, Tyco is in
7 the best position to evaluate, should any different or
8 additional warnings be needed for the subject
9 cylinder, to make that determination.

10 Q And you're not opining that it would have
11 been necessary or appropriate for Tyco to have
12 included additional warnings? You're just saying they
13 would be in a better position if those warnings were
14 required?

15 A Yes, sir. Should there be any different or
16 additional safety information that may have been
17 needed to be considered to be provided, Tyco is the
18 entity that would be the ones to evaluate and make
19 that determination.

20 Obviously, they made the determination to
21 paint a portion of the tank green. So they,
22 obviously, are making some considerations to the
23 intended use of this tank as a test cylinder as
24 opposed to a different type of application.

25 Q And did the painting of the test tank green

1 mean anything to you from a warnings perspective, or
2 you're just saying they treated it as a separate
3 type of tank?

4 A They're treating it as a separate type of
5 tank. They chose to put labels on some types of
6 tanks. And they chose to address this type of tank by
7 painting it green. So it's just trying to make a
8 differentiation, I think, between the intended uses of
9 the tanks.

10 Does that impart any responsibility upon
11 Tyco to provide any different or additional warning?
12 That's not my -- I'm just saying Oprandy's would not
13 be the entity to make that determination.

14 Q Okay. And if the hazards were some kind
15 of -- if a physical health hazard were posed by the
16 Poseidon system as opposed to, you know, the Tyco
17 tank, do you agree that it would be Poseidon that's in
18 the best position to evaluate the risks posed by its
19 product?

20 MS. FAPPIANO: Objection.

21 A As it relates to the potential hazards
22 associated with the Poseidon system and potentially
23 transfilling material, yes. That's under the CGA
24 standard and also addressed by the other experts. I
25 think that's where we do agree, as I state on page 9,

1 with Mr. Coelho and Mr. Juliano that Poseidon would be
2 responsible as it relates to the operating
3 instructions as the supplier of the transfill
4 equipment.

5 BY MR. KIRKPATRICK:

6 Q And you agree that Poseidon, in addition to
7 it being in the standard, they would be in the best
8 position to evaluate the risks associated with its
9 product?

10 A Yes, sir. Yes, the risks associated with
11 the cascade system and the transfilling of the
12 material from their system, yes, sir.

13 Q Okay. On the same page, you state that the
14 product -- sorry. Actually, I think we just covered
15 that.

16 You state that it is not reasonable to
17 expect an entity that services fire extinguishers to
18 reach a different conclusion with regard to safety
19 communications for the test tank. What's the basis
20 for that opinion?

21 A I think that, generally, the expectation is
22 that the manufacturers of products, that they are
23 responsible for performing any analysis as it relates
24 to products they're intending to sell and market, that
25 they are the entity that is best suited to provide the

1 warnings and safety communications for their product.

2 I think that's generally accepted across
3 many industries, that you wouldn't have an expectation
4 that the consumer or the entity buying your product is
5 going to take that product and then provide -- or
6 perform some different or additional safety analysis
7 as it relates to the characteristics of that product
8 because the consumer or end user or the purchaser of
9 that product is not going to have the benefit of all
10 the knowledge that you did as the assembler of those
11 parts to make the system, to make the test tank.

12 So the entity that should say it's necessary
13 or should any different or additional safety
14 communications be needed, that would fall to the
15 assembler of the test tank.

16 Q And is that understanding based on something
17 that you've studied or a particular reference, or is
18 that just something that you've observed?

19 A I think that's expressly in some standards
20 as it relates to -- that are applicable to
21 manufacturers of some products. Is it in the federal
22 regulations to a certain extent for some products?
23 Yes. Is it in commonly accepted standards from the
24 UL, ASTM, and others? Yes.

25 So, generally, I think as the assembler of

1 the component parts to make the system, that entity is
2 responsible for providing the safety communications
3 should any be necessary for that system. I think
4 that's well-established in the literature and the
5 standards and regulations that are out there for a
6 variety of problems.

7 Q Okay. Do you agree that it's important for
8 employers to recognize and guard against workplace
9 hazards?

10 A Yes, sir. Yes. It's certainly -- in
11 general, I would agree that it's important for
12 employers to evaluate potential hazards in the
13 workplace and address them, yes, sir.

14 Q Okay. Looking at page 8, there's excerpts
15 that you have from C-7. It's your opinion that to
16 comply with CGA C-7, Oprandy's would have needed to
17 include a label that includes essentially all the
18 contents listed here?

19 A So, yeah. Once the cylinder is filled and
20 is transferred from one individual to the next
21 individual, before it's transferred off-site, it
22 certainly would be -- should have been labeled as
23 compressed air, signal word, and a warning in the
24 statements you see here in the -- out of the middle
25 panel. And then there's a note as it relates to the

1 DOT -- or these are the GHS symbols. So, yes, that
2 would be the content of the safety information that
3 should have been provided by Oprandy's for the
4 cylinder.

5 Q Okay. And it's your opinion that that only
6 would have needed to go on after the tank was filled?

7 A Prior to the time it's transferred from
8 Mr. Foust to another individual.

9 Q And is there any requirement that that label
10 be taken off at some point?

11 A I mean, if the tank is not filled with a
12 given material and it's empty, it probably would be
13 not unreasonable to remove the prior labeling. I
14 don't know what their process was. Or if you're
15 intending to fill it with a different material that
16 had on a previous occasion, then it would be
17 appropriate to remove the prior one.

18 Q Okay. And this excerpt that you have here,
19 am I right that this is not what the label would need
20 to look like? It just contains the references that
21 would need to be in the label? Am I right about that?

22 A Sure. So you have to identify the chemical.
23 So here it's compressed air. You have to provide the
24 statements in the middle panel of Figure 1.

25 Q Oh, okay. And would it need to look

1 identical to the middle panel of this figure?

2 A There's different ways you can do it.
3 Because it's intended only to be used internally and
4 not being sold, there's not a requirement for a color.
5 So it could just be black and white.

6 So it's really to have the pictogram, the
7 signal word, the identification of the material, and
8 the hazard and precautionary statement. So that's
9 generally what you're trying to communicate because
10 it not being sold to another entity.

11 Q Okay. You discussed earlier in your report
12 about how it's important for warnings -- in order for
13 a warning to be effective, the individual who sees the
14 warning has to notice it, agree with it, believe it
15 should be followed, et cetera, et cetera; right?

16 A Generally, yes, sir. Yeah, that's fair.

17 Q Do you have an opinion as to whether a
18 warning on the test tank would have been believed by
19 Mr. Foust?

20 MS. FAPPIANO: Objection to form.

21 A You'd have to give me some more information
22 as it relates to that hypothetical. You know, what is
23 the content? Was this trying to communicate a hazard?
24 Generally, I think that would fall outside of my
25 opinions as it relates to this matter, which are

1 really specific just to labeling and as it relates to
2 the cylinder itself. But that hypothetical, I would
3 need some more information.

4 Q Okay. And you did not -- well, strike that.

5 So whether a warning will be followed,
6 believed, the things that you described, it depends on
7 a lot of factors for the warning label; right?

8 MS. FAPPIANO: Objection to form.

9 A There's lots of factors that need to be
10 considered: The characteristics of the intended
11 audience, the safety communication itself, the
12 hazards, prior experience. There's a variety of
13 factors have to be evaluated. But, again, that's not
14 the scope of what I'm opining about.

15 BY MR. KIRKPATRICK:

16 Q Okay. Now, on page 9 you discuss CGA C-7,
17 Section 5.2.3. What's the basis for your opinion that
18 this section did not apply to the test tank?

19 A So this is identifying if you come across a
20 tank that is not appropriately labeled that it should
21 be segregated and returned to the gas supplier or
22 distributor.

23 So if you're hypothetically at a workplace
24 or some location and there's a cylinder that's not
25 appropriately labeled, you shouldn't use that cylinder

1 because you're not going to be aware of what the
2 contents of that cylinder is or the general hazards
3 associated with the contents of that cylinder.

4 Given that that would be unknown to you, it
5 would not be appropriate to use that cylinder. So
6 that cylinder should be segregated and returned to the
7 supplier for them to either dispose of or -- however
8 they're going to address that particular circumstance.

9 So it's really to the end user to not use
10 any cylinder that's not appropriately marked so you
11 wouldn't accidentally discharge a different chemical
12 than you're intending to use in a certain
13 circumstance.

14 Q And you're saying that this does not apply
15 because the employees at Oprandy's knew the contents
16 of the cylinder?

17 A Well, it's that the cylinder at the time of
18 the incident is being transfilled with the compressed
19 air. So the person who's doing the transfilling knows
20 what chemical they're putting into the cylinder. So
21 once that activity is complete, the contents of the
22 cylinder has to be identified, labeled appropriately,
23 and then it can be transported off-site.

24 Q You agree that when Mr. Foust -- before he
25 filled the cylinder, when he was handling the

1 cylinder, it did not have a label identifying the
2 contents of the cylinder?

3 A I haven't seen any photographs that would
4 indicate that there would have been a label on there.
5 And I'm not aware of any evidence that there was a
6 label on there.

7 The photographs I've seen, that was at the
8 time of the accident. The cylinder is distorted,
9 ripped apart. So you can only -- I can't make that
10 determination. I don't know.

11 Q Okay. But if the cylinder did not have a
12 legibly written stamped or stenciled identification on
13 it, then that tank should not have been handled?

14 MS. FAPPIANO: Objection.

15 A I think there's different aspects here. So
16 when we're talking about tank markings, that's
17 separate and apart from the responsibility of
18 Oprandy's but the -- labeling for the contents of the
19 cylinder. So putting a label on for just the contents
20 of the cylinder would be the responsibility of
21 Oprandy's prior to the time that Mr. Foust -- once he
22 hypothetically finished filling the cylinder and given
23 it to Mr. Scott, the contents of the cylinder should
24 have been appropriately labeled as compressed air in
25 accordance with CGA C-7 and the OSHA HazCom standard.

1 BY MR. KIRKPATRICK:

2 Q But before Mr. Foust filled the tank, if the
3 container did not have a label on it, then should he
4 have segregated it for a return to the gas supplier or
5 the distributor?

6 MS. FAPPIANO: Objection to form.

7 A Based on my understanding as it relates to
8 this circumstance, the subject cylinder was empty. It
9 had no contents prior to the time it was being filled.
10 So it was not unreasonable for Mr. Foust to attempt to
11 fill the cylinder prior to that time. And then it's
12 not inappropriate for Mr. Foust not to have applied
13 the label until after the time of filling the cylinder
14 should that have occurred.

15 BY MR. KIRKPATRICK:

16 Q And what is the basis for your understanding
17 that Mr. Foust knew that the cylinder was empty at the
18 time that he handled it?

19 A I think that's Mr. Scott's testimony, that
20 he had used the cylinders approximately one week prior
21 to the date of this event to perform a similar
22 exercise and that he was requesting Mr. Foust to fill
23 the cylinders on the day of the subject event to go
24 and do the off-site testing again.

25 Q So your understanding that Mr. Foust knew

1 the tank was empty is based on Mr. Scott's testimony;
2 is that right?

3 A I think that's fair, yes, sir. That would
4 be based on Mr. Scott's testimony as it relates to his
5 prior use of the tank and that he had not used it and
6 asked Mr. Foust to fill it on the day of the event,
7 yes, sir.

8 Q So if Mr. Foust was not sure whether the
9 tank was fully empty, then should he have -- and the
10 tank did not have the contents labeled, then should he
11 have segregated it for return to the gas supplier or
12 distributor?

13 MS. FAPPIANO: Objection.

14 A I'm not aware of any basis that Mr. Foust --
15 or any evidence that there's any confusion that the
16 tank was not empty prior to the time of this event.
17 BY MR. KIRKPATRICK:

18 Q Well, let's just -- even extracting from
19 this case, just as a general matter, under the terms
20 of 5.2.3, if an individual is unsure whether a tank is
21 full or empty, should they segregate it and return it
22 to the gas supplier or distributor?

23 MS. FAPPIANO: Objection.

24 A I think -- not knowing the specific business
25 practice of Oprandy's as it relates to how they would

1 handle that, I think it certainly is not unreasonable
2 given that these test tanks are used with either
3 compressed air or nitrogen that it would be within the
4 purview of Oprandy's to discharge safely should there
5 be any residual pressure or material in the tank prior
6 to the time of filling, so they would -- not knowing
7 their exact practice, it would not be unreasonable for
8 them to appropriately handle and prepare the cylinder.

9 But I don't have any evidence that they did
10 that or they were confused by the contents of the
11 cylinder on the day of this event.

12 BY MR. KIRKPATRICK:

13 Q So if an individual has reason to believe
14 that they know the contents of the cylinder and that
15 cylinder is not identified, they are still okay to use
16 the cylinder so long as they believe that they know
17 what's in it?

18 A No, sir. I think there's -- under this
19 hypothetical, if you don't know what the contents is,
20 could you make a determination of what the contents
21 is? Yes. How would you go about doing that? Well,
22 you would have to maybe test the gas, should there be
23 any. If the valve is already open and there's not any
24 pressure on the tank, that should confirm the tank is
25 empty.

1 You're intending to fill it with the same
2 material it's been filled with previously, air or
3 nitrogen. You're not trying to fill it with a
4 different type of chemical or a different potential
5 material. So given that you're intending to use the
6 tank for its similar purpose, if you can confirm that
7 it's empty, it would not be inappropriate to fill the
8 tank.

9 Should there be any pressure or material in
10 the tank that you're not aware of what the contents
11 is, then you have to take steps to identify the
12 potential contents of the tank prior to using it or to
13 safely discharge the remaining pressure of the
14 material (Zoom glitch).

15 (Reporter clarification.)

16 A Following a safety procedure to discharge
17 the remaining material so you can ensure the tank is
18 empty prior to the time of filling it.

19 BY MR. KIRKPATRICK:

20 Q And what's the basis for your opinions
21 related to the appropriateness of the steps for
22 determining whether a tank is empty?

23 A That would fall on the employer. That would
24 be their policies and procedures as it relates to
25 handling these tanks that come back.

1 Obviously, as it relates to the fire
2 extinguishers, they're bringing these back,
3 discharging them, reassembling them -- or maintaining
4 them and refilling them. So they're in the business
5 of handling these cylinders or theses types of
6 cylinders.

7 So that would be within the purview of the
8 employer as to the -- what they have determined to be
9 their policies and procedures as it relates to the
10 handling of the tanks themselves.

11 Q My question is -- you stated shortly ago
12 that it would not be inappropriate under the
13 circumstances as you understand them for Oprandy's --
14 for Chris Foust to empty the tank or to determine
15 whether the tank is empty. And I'm wondering on what
16 basis do you believe that such steps would not be
17 inappropriate?

18 MS. FAPPIANO: Objection. That
19 misstates his testimony.

20 A I'm not following your question.

21 BY MR. KIRKPATRICK:

22 Q You just a short while ago described steps
23 that -- and I believe I'm quoting you right. You were
24 saying it would not be inappropriate for Chris Foust
25 to determine whether the tank is empty or not. And my

1 question is, on what basis are you saying that it
2 would not be inappropriate for Chris Foust to do so?

3 MS. FAPPIANO: I have the same
4 objection.

5 A As I understand your question, that this is
6 in the purview of what Oprandy's does as it relates to
7 the subject container, that the subject vessel is
8 intended to be filled and discharged, the way it is
9 used, it is my understanding it's fully discharged
10 every time it is used in the balloon test so that the
11 container would always return empty.

12 Should the container not be empty for some
13 reason, there may be indications of pressure or other
14 evidence or communications from Mr. Scott to Mr. Foust
15 as relates to some other possible circumstance. But
16 the general expectation is the tank would be used, the
17 entire contents would be consumed, and the tank would
18 be empty prior to it returning to Oprandy's, where it
19 is stored until the next time it needs to be filled
20 for the next test. So that's my understanding of the
21 process.

22 Should there be some other circumstance
23 that -- there may be policies and procedures within
24 Oprandy's to address. But that would have to be
25 addressed by Oprandy's as it relates to the handling

1 of a container or a vessel that they don't know the
2 contents of. But here my understanding is the
3 contents of the vessel is consumed in every test and
4 the containers are returned empty to the facility.

5 BY MR. KIRKPATRICK:

6 Q Okay. It is your opinion that employers
7 have the discretion to develop policies and procedures
8 for determining whether a tank is empty or full?

9 MS. FAPPIANO: Object to the form.

10 A I think that would be in the purview of
11 Oprandy's business as it relates to the processing and
12 handling of fire extinguishers and the test tanks,
13 that they are the entity that would -- if there's some
14 abnormal circumstance that comes up that they would
15 have to address it as it relates to the -- if there's
16 a tank that they don't know the contents of or
17 whatever circumstance may present itself, they'd make
18 a determination about what to do with that particular
19 tank.

20 If it's a tank that's been received from a
21 supplier, certainly then they would probably go to
22 5.2.3 and say this tank has not been identified
23 appropriately by the supplier, we're sending it back.

24 If it's an internal tank that is similar to
25 the test tank that they know, that they've been in

1 control of, that they know what the circumstances of
2 its use has been and what their intended use is to be,
3 then they would be the ones to appropriately address
4 how to handle that circumstance.

5 BY MR. KIRKPATRICK:

6 Q Is it your understanding under the
7 regulations -- so not talking about Oprandy's in
8 particular but under the regulations -- that employers
9 have the discretion to develop policies and procedures
10 for determining whether a tank that's unidentified is
11 full or empty?

12 MS. FAPPIANO: Objection to form.

13 A I think it definitely depends on the
14 employer and their circumstances and what their
15 capabilities are.

16 So if you're an end user and you're taking
17 in a tank from a distributor or somebody you're
18 purchasing material from, that's definitely much
19 different than if you're a more sophisticated entity
20 as it relates to the filling of the tanks and the
21 labeling of the tanks. And even then, supplier
22 material would be a different category.

23 So I think the answer is, certainly, it
24 depends on whoever the entity is that is receiving the
25 material.

1 Q And is that opinion based on particular
2 regulations or industry standards?

3 A I think it's based in part on the CGA P-1
4 that we're talking about here, where there's a
5 potential for unidentified-contents material, that the
6 end user would return that cylinder to the supplier.

7 But circumstances are going to be different
8 for different entities, depending on their role in the
9 supply chain.

10 Q And what you're consulting for that opinion
11 is primarily what's in the CGA standards?

12 A I think that's fair, yeah. The CGA C-7 does
13 provide some. P-1 and C-7 provide some guidance as it
14 relates to the cylinders and who's responsible to
15 label the cylinders with regard to the potential
16 hazards and if you come across an unidentified
17 cylinder as a user that you should return it to the
18 supplier, yes sir.

19 MR. KIRKPATRICK: Okay. Let's take a
20 break now and come back in five minutes.

21 (Whereupon, a recess was taken.)

22 MR. KIRKPATRICK: I have no further
23 questions for you, sir. Thank you for your
24 time.

25 THE WITNESS: Great. Thank you.

1 MR. FROMSON: I have no questions.

2 MS. FAPPIANO: I have no questions.

3 THE REPORTER: Before we go off the
4 record, is the witness going to read and sign
5 or waive?

6 THE WITNESS: I'll read and sign.

7 THE REPORTER: Okay. And, also, I need
8 to get the orders.

9 Ms. Fappiano, did you want a copy?

10 MS. FAPPIANO: Yes, please.

11 THE REPORTER: Okay.

12 Mr. Fromson, did you want a copy?

13 MR. FROMSON: I'll take a copy. I do
14 not need it expedited. Just a regular copy.

15 THE REPORTER: Okay.

16 MS. FAPPIANO: Yeah, me either. Regular
17 is fine.

18 THE REPORTER: Okay.

19 And, Mr. Kirkpatrick, you'll get the
20 original and a copy; right?

21 MR. KIRKPATRICK: Right.

22 (Deposition concluded at 1:41 p.m.)
23
24
25

REPORTER DISCLOSURES

The following representations and disclosures are made in compliance with Georgia Law, more specifically:

Article 10(B) of the Rules and Regulations of the Board of Court Reporting (disclosure forms), OCGA 9-11-28(c) (disqualification of reporter for financial interest), OCGA 15-14-37(a) and (b) (prohibitions against contracts except on a case-by-case basis).

- I am a certified reporter in the State of Georgia.

- I am a subcontractor for Veritext.

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- I have no relationship of interest in the matter on which I am about to report which would disqualify me from making a verbatim record or maintaining my obligation of impartiality in compliance with the Code of Professional Ethics.

- I have no direct contract with any party in this action and my compensation is determined solely by the terms of my subcontractor agreement.

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- Veritext was contacted to provide reporting services by the noticing or taking attorney in this matter.

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- Transcripts: The transcript of this proceeding as produced will be a true, correct, and complete record of the colloquies, questions, and answers as submitted by the certified court reporter.

- Exhibits: No changes will be made to the exhibits as submitted by the reporter, attorneys, or witnesses.

1 - Password-Protected Access: Transcripts and exhibits
relating to this proceeding will be uploaded to a
2 password-protected repository, to which all ordering
parties will have access.

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C E R T I F I C A T E

I hereby certify that the foregoing transcript was reported, as stated in the caption; that the witness was duly sworn and elected to reserve signature in this matter; that the colloquies, questions and answers were reduced to typewriting under my direction; and that the foregoing pages represent a true, correct, and complete record of the evidence given.

The above certification is expressly withdrawn and denied upon the disassembly or photocopying of the foregoing transcript, unless said disassembly or photocopying is done under the auspices of Veritext Legal Solutions, and the signature and original seal is attached thereto.

Pursuant to Article 10B of the Rules and Regulations of the Board of Court Reporting of the Judicial Council of Georgia, I make the following disclosure: That I am a Georgia Certified Court Reporter and Registered Professional Reporter, here as an independent contractor for Veritext Legal Solutions; that I was contacted by the offices of Veritext Legal Solutions to provide court reporting services for this deposition; that I will not be taking this deposition under any contract prohibited by Georgia law; and that I am not disqualified as a reporter for a relationship of interest under the provisions of O.C.G.A. 9-11-28(c).

This the 3rd day of August, 2020.



MARCIA ARBERMAN, CCR-B-1059

1 TARA FAPPIANO, ESQ.

2 tara.fappiano@hbandglaw.com

3 August 4th, 2020

4 RE: Franklin Buono v. Tyco Fire Products LP.

5 7/21/2020, Eric Boelhouwer (#4139718)

6 The above-referenced transcript is available for
7 review.

8 Within the applicable timeframe, the witness should
9 read the testimony to verify its accuracy. If there are
10 any changes, the witness should note those with the
11 reason, on the attached Errata Sheet.

12 The witness should sign the Acknowledgment of
13 Deponent and Errata and return to the deposing attorney.
14 Copies should be sent to all counsel, and to Veritext at
15 cs-ny@veritext.com

16
17 Return completed errata within 30 days from
18 receipt of testimony.

19 If the witness fails to do so within the time
20 allotted, the transcript may be used as if signed.

21
22 Yours,
23 Veritext Legal Solutions
24
25

1 Franklin Buono v. Tyco Fire Products LP.

2 Eric Boelhouwer (#4139718)

3 E R R A T A S H E E T

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23 _____

24 Eric Boelhouwer

Date

25

Franklin Buono v. Tyco Fire Products LP.

Eric Boelhouwer (#4139718)

ACKNOWLEDGEMENT OF DEPONENT

I, Eric Boelhouwer, do hereby declare that I have read the foregoing transcript, I have made any corrections, additions, or changes I deemed necessary as noted above to be appended hereto, and that the same is a true, correct and complete transcript of the testimony given by me.

Eric Boelhouwer

Date

*If notary is required

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_____ DAY OF _____, 20____.

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Page 1

&	1:41 94:22	3rd 97:16	8
& 1:14 3:4,10,16 16:4	2	4	8 53:8 72:24 79:14 845 3:5
0	2 2:7 9:12 24:19 24:21 28:1 31:19 40:15 42:9 65:16	4 2:3 33:4 40:15 55:12	9
05915 1:5 06 9:22,24	20 37:8 100:15 2000 29:14 20005 3:11 2006 9:21 11:21 29:14	40 18:23 19:2 21:9 4139718 98:5 99:2 100:2 434-5000 3:11 45 3:16 5:21 4th 98:3	9 76:25 82:16 9-11-28 95:4 97:15 952-1100 3:17 98 9:22 99 9:23
1	2007 11:24 12:19 2012 39:21 2014 64:4,6 66:4 2015 52:20 53:9 55:4 57:22 58:19 59:19	5	a
1 2:6 7:1,3 20:12 25:3 26:1 31:18 51:19 52:20 53:9 55:4 57:22 58:19 59:19 63:8,19 64:8 65:16 66:3 66:13 69:16 80:24 93:3,13 1,4 30:9 10 4:13 37:8,21 95:3 100 31:4 10006 3:17 1059 1:21 97:20 10b 97:9 11 25:4 41:6 1150 1:20 4:14 11:02 1:19 12035 97:19 12550 3:5 1279 3:4 12:10 43:16 12th 3:10 1360 1:20 4:14 15-14-37 95:5,15 1500 37:11 17 37:24 17a 37:24 18 9:7 1965 51:21,25 52:5 1998 8:22 1999 29:13	2017 22:25 2018 24:6 2019 7:11 8:7 15:20 18:19 24:6 202 3:11 2020 1:18 18:17 97:16 98:3 21 1:18 2110 3:16 212 3:17 24 2:7 240 18:3 250 37:2 29 65:22	5 33:4 43:21 44:3 5.2.3 86:20 91:22 5.2.3. 82:17 5.7 53:10 54:1,5,8 54:10,17 55:6 56:6,25 50 15:6,7 21:9,15 21:15 58:8 562-0203 3:5	a.m. 1:19 abilities 44:8 45:10,19 able 39:6 55:20 abnormal 91:14 academic 41:9 43:23 45:16 accepted 44:1,4 78:2,23 access 96:1,2 accident 74:2 84:8 accidentally 83:11 accuracy 98:9 accurate 20:19,23 95:7 acknowledgement 100:3 acknowledgment 98:12 action 1:4 95:11 active 31:7,11,12 35:25 activities 7:15,16 57:4 activity 28:18 56:24 83:21 actual 54:2 56:24 61:12 add 7:14,21,24
	3	6	
	3 9:13 33:4 55:21 3.2.15. 55:22 3.2.30. 55:13 3.2.32. 55:16 30 13:15 15:11 98:17 300 3:4 30307 4:15	6 33:4 50:8 57:19 66:21	
		7	
		7 2:6 33:5,6 63:1,9 63:14,23 64:11,22 65:12 66:3,14 68:24 69:8,16,17 71:12 72:16,25 74:16 79:15,16 82:16 84:25 93:12 93:13 7/21/2020 98:5 70 13:14 15:12 725 3:10 7:17 1:5	

[added - assignments]

Page 2

added 19:13 21:7 addition 12:4,8 41:13 77:6 additional 5:7 69:4,5 71:25 73:12,24 74:10 75:3,8,12,16 76:11 78:6,13 additions 100:6 address 4:12 27:5 51:4 54:2 57:25 76:6 79:13 83:8 90:24 91:15 92:3 addressed 51:10 53:25 56:5 66:8 66:11 72:19,21 76:24 90:25 addresses 53:11 54:10,22 56:25 57:15 66:8 70:11 addressing 49:9 64:8 69:8 72:6 adequate 14:18 adequately 64:24 adjacent 9:16 adjunct 32:14 adjusted 74:15 administration 50:14 adopt 52:3 adopted 34:14 58:3 adoption 34:16 39:20 advised 58:8 affect 50:12 affiliate 32:5,22,24 afternoon 70:1 ago 22:5 89:11,22 agree 47:2 51:6 52:11 53:1 57:5	63:3,8,23 64:22 66:13 67:4 76:17 76:25 77:6 79:7 79:11 81:14 83:24 agreement 95:11 95:15 ahead 47:9 air 1:5,7 36:16 54:24 56:2,21 58:9,13,14 59:1,5 60:17,18 61:24 64:14 69:7 79:23 80:23 83:19 84:24 87:3 88:2 alabama 12:12 allotted 98:20 allowed 31:9 alter 54:18 alternative 31:5 ambiguous 48:3 48:15,19 amend 43:12 amended 52:3 american 33:1 amines 9:14 31:8 31:22 ammonia 31:22 amount 24:14 26:14 analyses 42:21 43:2,9 analysis 28:8,8,13 42:2,5 46:7 47:12 58:4 72:14 77:23 78:6 anhydrous 31:22 annotations 41:20 41:21,24 42:2 ansi 7:17 answer 52:23 64:11 92:23	answered 53:20 answers 95:18 97:4 anybody 25:5 apart 84:9,17 apologize 30:6 64:10 appear 58:14 appearances 3:1 appeared 4:2 appears 7:5 24:25 appended 100:7 applicability 48:6 49:21 applicable 48:12 50:23 52:16 54:15 55:18 56:4,16 58:6 69:2,11 72:2 78:20 98:8 application 30:23 75:24 applications 37:15 applied 85:12 95:16 applies 49:4 apply 27:16 45:25 49:23 52:13 63:9 82:18 83:14 appointed 7:16 appreciated 31:25 appropriate 14:19 59:3,17 75:11 80:17 83:5 appropriately 57:4 63:21 70:24 71:2 72:20,21 82:20,25 83:10,22 84:24 87:8 91:23 92:3 appropriateness 88:21	approximately 5:20 13:14 15:11 15:12 19:2 28:10 32:11 37:2 85:20 arberman 1:21 97:20 arcs 44:12 area 36:5 38:9 39:13 53:5,24 67:21 72:13 areas 14:8,15 25:15 39:3 45:5 47:25 arizona 22:7,18,23 arranged 30:10 arrangements 37:6 arthur 9:5 10:21 article 95:3 97:9 articles 41:9 47:16 asheville 9:2 10:4 aside 34:23 36:7 asked 24:1 48:1 60:6 66:24 86:6 asking 4:20 52:4 63:13 70:13 aspect 27:21 44:16 46:8 aspects 12:13,14 84:15 assemble 65:10 assembler 73:8 74:8 75:6 78:10 78:15,25 assembly 72:22 assigned 95:7 assignment 10:3,8 10:18 17:10,15,19 17:22 assignments 9:1,6 9:25 35:13,14
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[assist - case]

Page 3

assist 25:5 assisting 13:5 associated 59:1 62:1,10,18 65:3 66:9 68:5 72:7 76:22 77:8,10 83:3 associates 12:21 12:25 13:4 17:24 20:8 association 39:24 40:13 48:18 53:9 57:22 58:3,11,16 62:3,22 63:17 65:12 69:3 assume 4:22 astm 36:3 78:24 atlanta 1:20 4:14 24:1 attached 47:21 97:9 98:11 attempt 85:10 attempted 49:3 attend 33:24 attorney 95:14 98:13 attorneys 95:19 auburn 9:19 11:21 12:8,12,13 32:6 audience 82:11 august 97:16 98:3 auspices 97:8 authoritative 46:24 authority 58:22 authors 46:20 auto 1:6,6 automatically 95:16 automotive 14:5 14:21 37:15	available 98:6 avoid 53:17 aware 23:23 49:2 51:24 83:1 84:5 86:14 88:10 ayres 46:23	behavior 45:3 behavioral 44:19 believe 9:12 17:8 18:3 20:15 21:9 24:9 32:7 35:1,23 42:11 43:5 48:12 48:14,18 50:1 51:20,22 52:2 55:9 56:9 57:18 60:6 66:12 81:14 87:13,16 89:16,23 believed 81:18 82:6 benefit 78:9 benefits 29:25 best 39:2 73:2,9,11 73:13,23 74:9,23 75:7 76:18 77:7 77:25 better 56:23 74:4 74:4 75:13 beyond 69:6 72:7 biological 31:12 bird's 50:11 birmingham 12:12 bit 9:7 25:24 32:3 53:4 black 81:5 blend 31:16 blown 29:6 board 95:4 97:10 bodies 49:2 body 44:7,9 boelhouwer 1:17 2:7 4:1,6,13 6:17 6:18,19 43:21 98:5 99:2,24 100:2,4,12 brake 14:23	break 43:15 93:20 briefly 8:20 26:10 bringing 30:3 89:2 broader 46:17 broadway 3:16 brought 30:9 built 10:6 31:5 bulk 29:19 30:13 bullet 68:25 70:16 bullets 54:5 buono 1:2 67:5 98:4 99:1 100:1 business 23:24 31:23 55:16,23 57:3 86:24 89:4 91:11 businesses 50:23 51:9 butanediol 30:9 buyers 10:15 buying 78:4
	b		c
	b 1:6,21 2:4 3:3 95:3,5,15 97:20 back 19:17 20:10 21:18 29:24 43:16 51:20 57:18 66:20 88:25 89:2 91:23 93:20 baking 38:23 balloon 71:10 90:10 bar 39:12 barber 3:16 16:4 based 20:23 26:24 44:14 61:5 74:21 78:16 85:7 86:1,4 93:1,3 bases 42:12,14 43:7 basf 8:25 9:18 10:9 28:5,25 29:12 basically 70:18 basing 66:5 basis 12:3 42:12 55:5 65:14,17 69:2 77:19 82:17 85:16 86:14 88:20 89:16 90:1 95:5 baton 9:8 beaumont 31:3 beginning 64:16 behalf 3:2,7,14 22:14 49:11		c 63:1,9,14,23 64:11,22 65:12 66:14 69:8,16,17 74:16 79:15,16 82:16 84:25 93:12 93:13 95:4 97:1,1 97:15 call 37:1 called 30:10 capabilities 44:11 92:15 capacity 51:7 caption 97:3 carbon 24:9 career 20:25 carolina 9:2 10:5 cascade 77:11 case 7:25 15:17 16:5 17:5,10,15,19

18:9,21 19:9 22:10,19 23:9 24:24 25:11 34:23 35:2,4,25 39:22,23 42:1,5,22 43:3 47:19 48:4 86:19 95:5,5,15 cases 14:10,11,16 14:17,24 15:3 16:9,16 17:1 21:10 23:1,16 35:24 36:14 37:6 37:10 catalysts 31:21 category 54:11 92:22 ccr 1:21 97:20 center 12:9 certain 10:16 12:13 26:17 52:14 72:15 78:22 83:12 certainly 15:6 27:11 38:22 45:5 57:7 68:3 74:24 79:10,22 87:1 91:21 92:23 certainty 50:3 certification 97:6 certified 95:6,18 97:11 certify 97:2 cetera 44:8,8 81:15,15 cga 51:19 52:4,20 53:2,9 55:4 58:19 59:2,19 62:25 65:12 66:3,14 69:8,15 71:12 72:16 74:16 76:23 79:16 82:16 84:25 93:3,11,12	chain 93:9 chair 7:17 33:6 challenged 21:25 change 11:12 17:15,19 33:13 34:1,2,4 99:4,7,10 99:13,16,19 changes 33:16,19 95:19 98:10 100:6 changing 17:22 chapanis 44:3 characteristics 44:14 45:11,20 61:6,13 62:17 66:18 78:7 82:10 charging 17:24 chemical 9:17 10:6 11:14 28:19 31:6,10 39:12 59:8,21 60:2,8,15 60:23 61:7,18 65:2 68:5,22 72:6 80:22 83:11,20 88:4 chemicals 9:10,10 10:13 11:10,15 13:23 28:23 30:7 30:21 31:24 61:3 65:13 70:7 chose 70:8 73:17 76:5,6 chosen 33:24 chris 89:14,24 90:2 circumstance 58:20 59:12 68:12 83:8,13 85:8 90:15,22 91:14,17 92:4 circumstances 27:25 53:11 54:22	60:16,22 61:12 89:13 92:1,14 93:7 cite 27:13 40:10,19 46:22 51:1 62:25 63:1 cited 41:8 citing 27:7 civil 1:4 clarification 71:8 88:15 clarify 4:21 52:23 clarity 49:12 classes 11:25 12:1 12:16 classification 64:12 clear 19:14 52:21 click 7:3 clients 18:9,13 closely 9:15 clothes 22:16 co2 24:10 code 65:22 95:9 codes 38:13,15,17 coelho 6:15 19:18 19:25 27:5 77:1 cognitive 44:17 colleague 4:9 collected 58:7 colloquies 95:18 97:4 color 81:4 come 30:2 41:3 43:16 47:24 82:19 88:25 93:16,20 comes 91:14 coming 33:6 commercially 30:12	committee 7:17 33:5,8,9,22,22 commonly 34:18 43:25 44:4 78:23 communicate 34:22 61:22 81:23 communicated 62:16 communicating 63:12 communication 34:13,22 39:13,19 48:17 81:9 82:11 communications 7:18 14:2 17:12 17:17 25:17,18,19 26:2,3,4,5,8,12,21 27:21,23 35:16 38:5 41:12 46:7,8 50:5 53:6 61:25 70:9,23 71:15 72:1,17 73:12,15 73:25 74:11,18 75:2 77:19 78:1 78:14 79:2 90:14 compensation 95:11 compiled 58:12 complete 20:19,23 83:21 95:7,17 97:5 100:8 completed 98:17 compliance 95:2,9 comply 53:17 79:16 component 14:25 30:17 31:11 36:18 73:9 74:8 79:1 components 38:6 73:5 75:6
---	--	--	--

[comport - criticisms]

Page 5

comport 34:20 57:21,23 compress 48:17 compressed 23:17 23:19 35:6 36:8,9 36:16,17,20 39:24 40:8,13 51:15,17 52:9,12,15 53:9 54:23,24 55:14,24 56:2,21 57:22 58:2,9,11,13,14,15 59:1,5,19 60:17,17 61:24 62:2,22 63:17,25 64:9,12 64:14,20 65:12 67:20 69:3,7 79:23 80:23 83:18 84:24 87:3 comprises 44:9 computer 41:25 concern 60:19 concerned 43:24 60:21 concerning 34:9 concluded 94:22 conclusion 77:18 conclusions 49:7 conduct 24:5 conducted 42:21 conducting 29:19 43:9 47:12 configurations 22:17 confined 46:15 confirm 24:23 87:24 88:6 conflict 48:10 58:24 confused 87:10 confusion 86:15	conjunction 63:9 connected 71:6,9 connolly 3:10 consensus 34:8 consider 7:13 27:9 27:17 38:2,6,24 39:3 consideration 61:15 73:14 considerations 44:15 75:22 considered 75:17 82:10 considering 33:13 consistent 15:13 15:15 consolidated 22:12 consolidating 59:3 construction 10:20,22 36:2,4,5 consult 14:18 consulted 23:1 consulting 13:3,6 13:12 14:9 15:8 18:5 36:10,19 37:6 93:10 consumed 59:15 90:17 91:3 consumer 13:24 13:25 16:11 36:24 78:4,8 consumers 35:8 contact 15:21 contacted 15:24 95:14 97:12 contain 8:13 30:19 container 54:7,7 54:14 55:1,2,15 56:19,19,20 62:1 63:12 85:3 90:7	90:11,12 91:1 containerized 55:17 containers 52:9,13 63:22 64:9 91:4 contains 42:9 80:20 contend 54:17 57:10 58:17 content 59:11 80:2 81:23 contents 58:2 59:16 61:23 62:1 62:6,9 63:12,21 65:1,3,5 66:9,17 68:5 69:9 70:7,10 70:23 71:10,14 72:6,17 74:14 75:2 79:18 83:2,3 83:15,21 84:2,18 84:19,23 85:9 86:10 87:10,14,19 87:20 88:10,12 90:17 91:2,3,16 93:5 context 14:6 56:10 61:9 continuing 40:15 contract 95:10 97:14 contractor 97:12 contracts 18:12 95:5 control 23:11 68:15,18 92:1 conversation 17:22 conversations 5:11,18,23 converted 30:10	coordinate 29:23 copies 98:14 copy 7:5 25:3 42:6 94:9,12,13,14,20 core 12:1 corn 31:1,3,15 corporate 9:2 10:4 corporation 8:25 9:18 28:6,25 29:12 correct 51:20,23 95:17 97:5 100:8 corrections 100:6 cost 31:4 council 97:10 counsel 3:1 98:14 count 21:18 counts 45:21 couple 5:10 6:23 13:7 23:23 29:21 29:21 33:10 46:4 course 20:25 29:25 34:23 38:11 39:9 42:7 courses 32:21,22 32:23 39:15,16 court 1:1 5:14 16:18 21:20 22:3 22:7 95:4,18 97:10,11,13 cover 14:11 covered 28:12 43:5 77:14 cracker 9:4 10:20 created 73:3,6 creates 50:11 54:8 68:8 criticism 34:19 criticisms 17:12 27:5 49:10 72:18
--	---	---	---

[cryogenic - disassembly]

Page 6

<p>cryogenic 35:3 55:14 cryotherapy 23:24 23:25 24:2 36:11 40:4 cs 98:15 current 7:6 8:8 32:8 33:15 35:19 51:22 curriculum 2:6 customer 11:16 cv 1:5 7:6,21,25 8:3,10,13 20:10 25:1 42:17 cycle 29:2 cylinder 17:13,17 24:7 35:8,9,17 36:20 55:10,19 57:2 58:2 64:15 65:2,4,6,9,11 67:2 67:20,24,25 68:3,6 69:10,20,21,24 70:24 71:1,4,11,21 72:12 75:4,9,23 79:19 80:4 82:2 82:24,25 83:2,3,5 83:6,10,16,17,20 83:22,25 84:1,2,8 84:11,19,20,22,23 85:8,11,13,17 87:8 87:11,14,15,16 93:6,17 cylinders 23:17,19 24:12,15 35:6,7,22 35:25 36:5,8,12,22 36:24 52:15 59:5 64:1,20 66:9,10,17 66:19 85:20,23 89:5,6 93:14,15</p>	<p>d d 1:6 d.c. 3:11 dangerous 61:1 daniel 3:9 4:10 data 10:11 14:4 date 7:8,13 20:14 33:14 85:21 99:24 100:12 day 11:9,9,14,14 66:23 67:3,6,8 85:23 86:6 87:11 97:16 100:15 days 98:17 dealers 24:16 dealing 24:16 dealt 34:24 debottleneck 31:4 december 15:20 15:23 18:18 decent 47:16 decision 60:25 73:23 declare 100:4 deemed 100:6 defendant 1:15 3:7,14 defendants 1:9 defense 15:10,12 deficiencies 51:4 define 49:18 50:6 defined 53:1 55:8 56:10 69:6 defines 65:16 definitely 92:13,18 definition 43:22 43:25 44:1,4,6 54:9,18 55:3,7,9 55:13,22 56:9,11 56:13</p>	<p>degree 11:23 50:2 dejoy 46:23 denied 97:7 depend 61:11 depending 62:15 93:8 depends 46:20 60:16 82:6 92:13 92:24 deponent 98:13 100:3 depos 5:13 deposed 4:3 deposing 98:13 deposition 1:17 6:1,1,4,8,11,13 17:3 18:7 19:5,8 19:16,23 20:4,13 20:15,20 21:5 22:25 25:9 41:19 41:22,23 47:21 94:22 97:13,14 depositions 5:7 19:11,22 41:20,25 42:3 describe 11:5,21 14:9 26:10 47:18 70:3 described 10:1 15:3 48:20 82:6 89:22 description 2:5 48:22 design 10:5 45:12 45:21 46:6 designed 53:14 detailed 10:5 details 5:17 determination 74:1,20 75:9,19,20 76:13 84:10 87:20</p>	<p>91:18 determine 49:5 89:14,25 determined 89:8 95:11 determining 45:8 88:22 91:8 92:10 develop 91:7 92:9 developed 63:24 64:18 development 7:18 8:25 39:15 49:1 devoted 13:11 diagram 45:7 difference 11:7 26:11 different 9:16,17 14:7 18:12 22:13 22:14,17 26:3 29:16 30:16 31:20 31:21 33:24 34:14 44:15 59:24 61:15 69:4,5 70:12 71:24,25 73:11,21 73:24 74:10 75:3 75:7,15,24 76:11 77:18 78:6,13 80:15 81:2 83:11 84:15 88:4,4 92:19,22 93:7,8 differentiate 45:16 differentiation 76:8 digital 33:7 dioxide 24:9 direct 95:10 direction 97:5 disagree 69:1 disassembly 97:7 97:7</p>
---	---	--	---

[discharge - estimate]

Page 7

discharge 71:10 83:11 87:4 88:13 88:16 discharged 67:21 90:8,9 discharging 89:3 discipline 43:24 45:18 disclosure 42:8 95:4 97:11 disclosures 17:4 95:1,2,13 disconnect 48:9 discount 95:16 discounts 95:15 discretion 91:7 92:9 discuss 10:1 32:17 33:21 66:21 82:16 discussed 5:25 11:1 34:3 35:2,4 36:7 38:4 40:2 66:12 69:16 74:22 81:11 dispose 83:7 disqualification 95:4 disqualified 21:20 97:14 disqualify 95:8 dissertation 39:18 distinction 65:6 distorted 84:8 distributes 55:24 distributing 24:4 56:1 distribution 44:16 56:14 distributor 82:22 85:5 86:12,22 92:17	distributors 10:15 district 1:1,1 diving 38:23 division 10:13 doctoral 12:10,10 13:1 39:18 document 48:22 53:8 documents 20:11 41:16 49:3 doing 10:5,14 13:7 32:17 58:4 59:2 83:19 87:21 doris 13:4 dorris 12:21,25 17:24 20:8 dot 80:1 dr 4:6 6:17,19 43:21 drawing 65:6 drawn 48:21 dryers 22:17 duly 4:3 97:3 dwhiteley 3:12	either 4:21 59:23 83:7 87:2 94:16 elected 97:3 electric 22:16,16 37:16 electrolux 22:15 email 33:25 34:6 emergency 37:14 employee 66:24 employees 67:22 68:1,8 83:15 employer 50:25 51:4,7 63:11 66:15 69:3 71:13 72:4,5,8 88:23 89:8 92:14 employers 50:16 65:13 79:8,12 91:6 92:8 employment 8:14 29:12 empty 80:12 85:8 85:17 86:1,9,16,21 87:25 88:7,18,22 89:14,15,25 90:11 90:12,18 91:4,8 92:11 enantiomer 31:8,9 encompass 25:1 40:20 45:1 74:16 encompasses 40:25 42:2 56:14 encompassing 26:20 56:15 endeavor 28:18 engineer 9:9 11:3 11:4 engineered 34:25 engineering 9:2 10:4,6 11:2,6,23 12:2,4 43:22,23	44:1 45:17,18 46:9,10,18 enjoyed 30:20 ensure 64:23 88:17 entail 33:9 entailed 10:2 enterprise 56:16 enterprises 50:20 entire 25:1 68:15 68:18 90:17 entirety 41:19,23 entities 93:8 entity 36:23 55:16 57:10 73:1,13,23 74:1 75:1,18 76:13 77:17,25 78:4,12 79:1 81:10 91:13 92:19 92:24 entry 7:14,19 8:16 environment 60:18 epidemiology 12:17 equipment 53:14 57:16 73:2 77:4 ergonomics 12:1,5 14:12 44:12 46:17 eric 1:17 4:1,13 98:5 99:2,24 100:2,4,12 errata 98:11,13,17 esq 3:3,9,9,15 98:1 essentially 32:14 33:8 66:6 79:17 established 65:21 79:4 estimate 15:7 18:22 21:1,9,10,13 21:19
	e e 2:1,4 97:1,1 99:3 99:3,3 earlier 13:6 38:4 46:13 55:8 64:17 81:11 easier 32:3 east 31:18 editing 26:7 education 12:9 effect 34:10 67:22 effective 81:13 effectively 31:9,14 34:22 54:20,25 61:22 eight 22:13,14 32:11		

estimating 18:25 et 44:8,8 81:15,15 ethics 95:10 evaluate 73:3,24 74:10 75:7,18 76:18 77:8 79:12 evaluated 82:13 event 85:21,23 86:6,16 87:11 everybody 29:24 everybody's 29:23 evidence 84:5 86:15 87:9 90:14 97:6 exact 87:7 examination 2:3 4:4 example 22:6 exception 54:1,9 56:6 68:9,11,16 exceptions 50:22 excerpt 80:18 excerpts 79:14 excluded 21:21 exercise 85:22 exhibit 2:5,6,7 6:20 7:1,3 20:12 24:19,21 25:3 42:9 exhibits 6:23,23 47:21 95:19,19 96:1 existed 47:5 expand 60:14 expansion 61:8,10 expect 77:17 expectation 12:15 77:21 78:3 90:16 expected 69:20,21 70:4 71:4,5,20 72:12	expedited 94:14 experience 28:2 34:24 36:9 37:5 38:12,18,20 39:24 82:12 experiences 35:5 expert 21:2,21 27:9,17 38:2 39:4 42:8 49:1 expertise 25:15 26:24 27:2 36:6 38:7,10 experts 25:8,11,12 38:24 47:24 48:6 48:9,11 49:13 69:1 76:24 explosivity 60:1 exposure 59:25 60:1 expressed 42:15 expresses 71:24 expressing 42:18 expressly 78:19 97:6 extent 52:14 63:11 66:15 71:15,23 73:22 78:22 extinguishers 77:17 89:2 91:12 extracting 86:18 eye 44:13 50:11	44:9,20 45:9,17,17 45:21 46:1,9,10,16 46:16,25 47:12,14 48:25 49:2,4 50:4 82:7,9,13 faculty 32:18,18 fails 50:25 98:19 fair 13:8,19 14:20 44:4 45:22 47:6 50:16,19 51:8 59:10 67:15 81:16 86:3 93:12 fall 29:13 50:20 51:9 65:11 75:5 78:14 81:24 88:23 falls 53:7 familiar 62:24 fappiano 3:15 5:11,18,25 42:5 49:8,17 50:18 59:9 62:7 71:22 76:20 81:20 82:8 84:14 85:6 86:13 86:23 89:18 90:3 91:9 92:12 94:2,9 94:10,16 98:1 fappiano's 16:4 17:6 far 18:21 20:18 federal 22:3,10 50:21 65:23 78:21 fee 18:15 fellowship 12:10 field 43:23 44:2 45:1 46:24 47:11 49:1 50:4 fields 45:6 figure 45:15 80:24 81:1 file 5:9 15:20,23 18:6,18 19:10	25:13 fill 56:10 66:24 67:2 70:8 80:15 85:11,22 86:6 88:1,3,7 filled 36:23 59:12 65:2 66:10 67:10 67:20 74:14 79:19 80:6,11 83:25 85:2,9 88:2 90:8 90:19 filling 56:15 57:6,7 63:22 65:13 66:19 67:25 84:22 85:13 87:6 88:18 92:20 fills 55:23 56:4 68:13 financial 95:4 find 22:21 35:10 46:14 48:22 64:13 fine 94:17 finish 25:16 finished 13:1 28:16 84:22 finite 34:4 finkelstein 3:4 fire 1:11,14 3:7 4:9 23:3,4,9 27:2 27:9,16,22 34:25 38:13,15,17 49:21 73:1 77:17 89:1 91:12 98:4 99:1 100:1 firefighters 37:12 37:14 firm 15:21 16:4 17:6 95:13 first 4:2 10:3 15:18,21,24 22:1,3 30:24 46:6
	f 97:1 facilitate 30:4 facilities 28:7 29:1 facility 10:7,25 28:15,19 30:25 91:4 factors 12:5 14:13 14:22 40:22 41:12 43:22,23 44:1,5,7		

[fit - half]

Page 9

fit 56:24 fits 57:3 five 5:21 16:8 28:10 43:15 93:20 fixed 18:13,14 29:18 flammability 59:23 60:1 flammable 61:14 61:16 focused 50:14 72:15 focusing 74:7 folder 6:23 follow 29:20 34:19 50:17,25 53:15 followed 81:15 82:5 following 9:6 11:11 88:16 89:20 95:2 97:10 follows 4:3 force 14:23 foregoing 97:2,5,7 100:5 form 49:8,17 50:18 59:9 62:7 71:22 81:20 82:8 85:6 91:9 92:12 formally 34:15 forming 40:17 forms 95:4 forth 55:6 58:19 forward 33:17 found 5:12 51:4 four 20:12,21 22:5 28:9 foust 67:2,5 80:8 81:19 83:24 84:21 85:2,10,12,17,22 85:25 86:6,8,14	89:14,24 90:2,14 framework 58:4 58:10 franklin 1:2 98:4 99:1 100:1 frequently 47:12 friday 5:20 fromson 3:3 94:1 94:12,13 front 39:6 fulfill 12:3 full 4:11 11:18 12:18,20 13:1 29:6 33:22 39:5 86:21 91:8 92:11 fully 55:3 86:9 90:9 funded 12:9 further 58:12 93:22	geismar 10:7 general 41:13 60:18 65:17 67:14 79:11 83:2 86:19 90:16 generally 10:1 11:8 14:1,6,11,13 14:15,17,25 16:10 17:16 20:18 25:19 26:21 27:8,22 28:24 29:17,22 32:20 33:21 34:5 34:20 38:8 40:20 40:24 47:1,3,13,18 49:19 50:9,22 56:18 57:21,23 77:21 78:2,25 81:9,16,24 gentleman 16:2 geographically 9:15 georgia 1:20 4:14 8:22 39:12 95:2,6 97:10,11,14 gerstman 3:16 16:4 getting 5:17 ghs 39:18 65:22 80:1 give 9:7 63:24 64:19 81:21 given 20:20 21:1 34:9 39:11,14 56:20 58:13 62:2 80:12 83:4 84:22 87:2 88:5 97:6 100:9 gives 58:10 65:18 giving 58:7 65:17 glitch 71:7 88:14	global 34:2 globally 39:20 go 8:20 9:18 21:18 25:22 48:22 80:6 85:23 87:21 91:21 94:3 going 10:20 11:13 12:7 25:21 26:14 31:3 37:1 45:2,25 53:13 59:12 61:11 66:22 67:5 68:21 70:18 78:5,9 83:1 83:8 93:7 94:4 good 4:6,7,23 15:19 18:22 43:17 governed 36:1 74:15 governing 51:11 government 34:17 53:18 grab 52:19 63:6 grabbed 52:20 graduated 8:21 gram 58:8 great 6:19 7:7 8:12 16:1 64:7 93:25 green 75:21,25 76:7 group 55:16 guard 79:8 guess 20:2,11 63:3 63:13 70:12 71:19 guidance 57:22 58:6 62:2 63:18 63:24 64:13,14,19 74:24 93:13 guide 64:11
	g		
	gallon 37:2 gallons 24:17 gas 22:16 23:17,19 35:6 36:8,9,20 39:24 40:13 48:17 53:2,9,12,21 54:3 54:9,18,19,25 55:11,14,17,20,22 55:22 56:3,8,10,13 56:20,25 57:11,22 58:2,11,15 59:19 60:14 61:8,11 62:2,22 63:17,25 64:20,24 65:12 69:3 82:21 85:4 86:11,22 87:22 gases 40:8 51:15 51:17 52:9,12,16 54:14,24 55:24 64:9,12 65:19		
			h
			h 2:4 99:3 half 30:25 73:19

[halfway - intending]

Page 10

halfway 22:22 handful 21:8 handle 87:1,8 92:4 handled 84:13 85:18 handling 51:12 52:9,12 64:9,10 83:25 88:25 89:5 89:10 90:25 91:12 happened 22:4 happening 22:2 happy 68:25 hard 5:14 29:23 harmonized 39:20 haworth 3:16 16:4 hazard 28:7,8,12 34:13,22 39:13,19 48:16 59:21 60:9 60:15,25 61:4,8 62:10 64:24 76:15 81:8,23 hazardous 51:12 65:19 hazards 28:17 53:17 58:1,1 59:1 59:8,22,25 60:24 61:19,20,25 62:5 62:18 63:25 64:20 65:3,7 66:9,18 68:5,22 72:7 76:14,21 79:9,12 82:12 83:2 93:16 hazcom 57:21 58:17 61:2,5 62:21 63:10 66:7 68:4,23 69:7,12,18 70:25 71:2,12 72:16 74:25 84:25 hbandglaw.com 3:18 98:2	heading 46:5 headquarters 10:9 health 50:14 63:25 64:19 76:15 heard 11:6 height 44:13 help 30:4 helpful 52:24 herbicide 31:2,3 31:10,15 hereto 100:7 high 31:18,19 historical 51:22 historically 8:19 33:11 history 8:14 hold 64:2 home 35:9,10 37:3 hope 70:10 hopefully 32:3 hour 18:3 hourly 17:25 18:16,16 hours 18:20 19:1,3 19:4,6 20:3,6 human 12:5 14:12 14:13,14,22 23:10 40:22 41:12 43:22 43:23 44:1,4,7,8,9 44:11,20,23,25 45:3,9,10,11,16,17 45:19,19,21,23,24 46:1,2,9,10,15,16 46:24 47:11,13 48:25 49:1,4 50:4 hundred 21:17 24:17 hybrid 37:16 hypothetical 81:22 82:2 87:19	hypothetically 68:11 82:23 84:22 <i>i</i> idea 15:2 21:16 identical 81:1 identification 7:1 24:19 81:7 84:12 identified 56:6 59:19 83:22 87:15 91:22 identify 73:17 80:22 88:11 identifying 60:23 82:19 84:1 <i>ii</i> 11:2,6 <i>iii</i> 11:2,7 impart 76:10 impartiality 95:9 implication 26:18 implications 62:15 important 79:7,11 81:12 inactive 31:7 inappropriate 85:12 88:7 89:12 89:17,24 90:2 incident 14:21 70:1 83:18 include 8:18 20:3 44:22 53:16 79:17 included 40:24 75:12 includes 79:17 incorporate 51:18 incorporated 9:1 increase 18:17 independent 97:12 indicate 84:4 indicating 73:20 indications 90:13	individual 43:7 55:16 59:13,13 61:3 68:12 79:20 79:21 80:8 81:13 86:20 87:13 individuals 44:14 47:11 industrial 9:10 11:22 12:2,4 13:25 28:3,4,19,23 30:22 46:18 industries 1:7 34:15 78:3 industry 23:3 27:3 27:10,16 63:18 93:2 information 34:9 44:7,9,22 45:4,10 45:19 58:12 63:20 65:21 75:16 80:2 81:21 82:3 infrequent 33:12 ingredient 31:12 initial 30:8 injuries 16:11 inside 24:15 69:9 instances 34:17 institute 8:22 institutes 33:2 instructions 14:1 15:1 23:14 24:2 25:20 26:16 38:5 38:9 39:9 44:18 47:14 77:3 intended 54:5 67:20 69:23 75:23 76:8 81:3 82:10 90:8 92:2 intending 69:25 77:24 80:15 83:12 88:1,5
--	--	---	---

[intent - little]

Page 11

intent 59:11 intention 43:8 interaction 14:12 14:14 23:10 26:19 45:4,23 46:1 interacts 46:2 interest 20:7 95:5 95:8 97:15 internal 91:24 internally 81:3 internship 12:21 interruption 60:4 introduction 65:15,25 66:2 involve 14:16 15:3 23:13 36:15,17 37:7 involved 10:11 11:22 23:2 24:11 30:7 31:19,23 45:24 54:13 61:12 67:5,8 involves 45:19 involving 22:16 23:17 35:2,22 issue 15:4 23:8 48:10 issued 16:18 issues 10:15 16:13 16:14 49:13	joint 12:11 judicial 97:10 juliano 6:15 19:18 19:25 27:5 77:1 july 1:18 jump 25:24 jumping 47:9 jurisdiction 38:13 38:15,17	91:25 92:1 knowing 86:24 87:6 knowledge 41:11 78:10 known 10:12 25:24 knows 83:19	legibly 84:12 levels 11:2 levers 23:11 licensed 11:3 limitation 65:14 limitations 44:11 45:11,20 65:9 limited 21:24 22:9 56:11 70:20,21 limits 58:18 line 5:22 10:21 20:18 99:4,7,10,13 99:16,19 liquid 24:10,14 55:14 liquids 65:20 list 2:6 7:6 20:14 20:19,23 21:4,8 22:4 25:2 30:8 39:2,5 40:16 41:16 47:9,15 listed 5:10 6:5,9 19:10 21:3 25:13 40:17 41:3,14,16 42:25 79:18 literature 14:25 26:9,15 33:16 40:23 41:12 44:10 44:19,21 46:10,13 46:14,19,19 47:4,5 47:7,15 79:4 litigation 13:3,5,8 13:12,12,15,15,21 14:9 15:8 18:10 18:11,15 23:18,20 23:22 27:24,24 34:18 35:18,20,22 36:10,12 40:3 little 9:7 26:7 32:3 33:12 40:1 53:4 60:19
j 1:17 4:1 james 3:9 4:8 january 9:23 11:24 12:19 18:17 22:8 29:13 jersey 9:3 10:9,10 jkirkpatrick 3:12 job 8:22 john 4:13	k keeping 11:12 33:14 kenneth 3:3 kfromson 3:6 kind 12:6 15:4 22:21 33:14 40:19 58:10 59:2 66:11 68:9 72:13 76:14 kirkpatrick 2:3 3:9 4:5,8 7:2 24:20 32:1,2 43:20 49:14,25 50:24 59:20 60:5 60:7,11,12 62:12 71:18 72:9 77:5 82:15 85:1,15 86:17 87:12 88:19 89:21 91:5 92:5 93:19,22 94:19,21 kitchen 73:1 knew 83:15 85:17 85:25 know 8:14 11:10 14:13 15:6 18:23 18:25 20:19 21:14 21:18 25:23 30:17 35:9 45:6 47:1 50:9 52:18 62:25 73:18 76:16 80:14 81:22 84:10 87:14 87:16,19 91:1,16	l label 58:14 59:7 59:18 60:24 61:1 63:21 65:21 67:23 70:3 71:13 79:17 80:9,19,21 82:7 84:1,4,6,19 85:3 85:13 93:15 labeled 68:4,23 70:24 71:2 79:22 82:20,25 83:22 84:24 86:10 labeling 10:12 14:5 61:18,20 63:19 64:12 66:16 66:16 68:9,20 70:6,9 72:19 80:13 82:1 84:18 92:21 labels 14:6,19 64:24 65:18 76:5 ladder 23:12 large 24:16 larger 35:10 37:1 lasted 5:19 9:7 law 15:21 16:4 17:6 95:2 97:14 lawampm.com 3:6 led 28:2 left 9:18,20 31:9 legal 97:8,12,13 98:23	

llc 3:16 llp 3:4,10 lms 1:5 local 24:1 location 68:2 82:24 long 5:19 29:15,16 60:1 87:16 look 6:22 24:21 28:14 80:20,25 looking 20:10,11 46:5 63:4 64:3 79:14 looks 25:3 lot 26:13 30:4 50:10 82:7 lots 82:9 louisiana 9:8 31:6 lp 1:8,11 3:7 98:4 99:1 100:1	manufacturers 13:23 14:2,7 23:25 34:20 77:22 78:21 manufacturing 9:9,17 10:16 11:9 28:19,23 30:13 31:2 56:14 march 7:11 8:7 20:16 marcia 1:21 30:20 32:1,4 60:7 97:20 mark 8:6 marked 6:22 7:1 24:19 83:10 market 77:24 marketing 46:14 markings 65:18 84:16 material 6:5 11:11 18:6 40:17 54:6 57:1,8 59:14 60:21 61:6,11,13 61:14 62:11,16,17 62:18 66:10 69:9 76:23 77:12 80:12 80:15 81:7 87:5 88:2,5,9,14,17 92:18,22,25 93:5 materials 5:9 6:9 6:10 10:11 17:11 19:10 25:13 28:16 31:20 40:9,16,21 40:25 41:2,13,16 41:17 43:6 48:11 51:12 56:1 66:18 matter 18:19 23:4 24:14 27:1,14 35:18,20 37:22 38:1,16 40:22 41:1 45:18 47:25	49:23 54:16 56:17 56:21 57:17 61:21 71:17 72:23 81:25 86:19 95:8,14 97:4 matters 8:11 16:19 21:25 27:12 35:22 40:2 mba 11:17 mccarthy 46:22 mean 8:5 32:10 36:1 46:11 57:23 58:21 69:21 70:13 71:3,19 76:1 80:11 means 51:3 56:2 meant 29:9 media 33:7 meet 54:5 55:3 meeting 33:25 34:3 meetings 33:10 member 33:5,8,9 members 33:23 memorialized 42:24 43:1 mendoza 22:22 mention 69:19 mentioned 6:4 11:21 13:13 19:23 25:8 29:15 32:25 36:15 50:10 methodology 47:19,20 48:20,23 48:24 49:15 methods 65:21 middle 79:24 80:24 81:1 million 31:4 mind 41:3 58:23 70:14	mine 12:5 minimum 65:19 minutes 5:21,21 43:16 93:20 misrepresentation 49:11 missed 8:14 misspoken 64:17 misstated 64:11 misstates 89:19 misunderstanding 49:11 modifications 28:11 moipa 9:13 31:12 31:15,16 molecular 30:16 molecules 30:16 month 15:22 months 9:7 28:20 29:21,22 morning 4:6,7 5:21 mount 10:10 move 32:12 moved 9:8 moves 33:17 moving 30:5 68:24 multiple 67:17 multiproduct 31:18
m			n
m 2:1 maintain 8:2 maintaining 89:3 95:9 making 11:11,13 11:14 73:22 75:22 95:9 man 16:2 management 11:12 manner 55:18 manuals 14:5,7 manufacture 73:19 manufacturer 23:5,9 26:22 35:16 36:25 54:4 54:23 72:21 73:4 73:8 74:5			n 2:1,1 name 4:8,11 16:2 names 22:11,19 national 33:1 nature 58:1 ne 1:20 necessarily 29:12 55:2,25 68:19

[necessary - opinions]

Page 13

necessary 53:16 73:16,25 74:12 75:11 78:12 79:3 100:6 need 7:14,19,21 20:17 33:16 61:22 62:16 63:7,21 65:24 66:16 73:15 74:11 75:4 80:19 80:21,25 82:3,9 94:7,14 needed 58:8 75:8 75:17 78:14 79:16 80:6 needs 75:1 90:19 neither 67:4 never 70:14 new 1:1 3:17 7:14 9:3 10:9,10,19 33:5 73:6 newburgh 3:5 nfpa 27:11,13,22 37:5,7,11,21 38:3 40:23 48:7,7 nine 32:11 niosh 12:9,11 nitrogen 61:24 87:3 88:3 non 13:8,12,15,21 18:10,11,15 23:18 23:22 27:24 36:10 40:3 55:17 north 9:2 10:5 notary 100:13,19 note 28:1 67:19 79:25 98:10 noted 100:7 notice 8:13 52:18 81:14 noticing 95:14	november 9:23 number 13:8 18:13 numbers 37:19 40:14 numerous 59:22 nw 3:10 ny 3:5,17 98:15 o o 2:1 o.c.g.a. 97:15 oath 4:16 5:1 object 91:9 objection 49:8,17 50:18 59:9 62:7 71:22 76:20 81:20 82:8 84:14 85:6 86:13,23 89:18 90:4 92:12 obligation 59:7 70:3,17 95:9 obligations 67:23 observed 78:18 obtaining 11:22 obviously 44:15 47:15 50:10,21 57:12 58:21 75:20 75:22 89:1 occasion 38:12 80:16 occasions 67:17 occupational 11:25 12:6 14:11 50:13 occurred 85:14 ocga 95:4,5,15 offer 16:15 42:10 offering 26:24 office 41:21 offices 97:12	oh 22:19 80:25 okay 4:19,25 5:22 6:4,13,17,22 7:3,7 7:13,20,24 8:2,8 8:12,17 9:22,25 11:5,17,20 12:18 12:23 13:3,10,21 15:8,17,24 16:3,9 16:20,25 17:5,9,14 17:23 18:4,20,25 19:4,14,22 20:2,7 20:10,17,25 21:5 21:10 22:1,10,18 22:24 23:1,6,8,13 23:16,16,22 24:5,7 24:21 25:5,8,14,21 26:10,23 27:2,8,15 28:1,21 29:9,15 30:6,20 32:25 33:18 34:7,23 35:2,12,18,21,24 36:7,14 37:5,9 38:2,11,18 39:2,8 39:16 40:5,10,15 41:2,6,24 42:4,8 42:12,16,21 43:1,8 43:15,16,18 44:6 44:22 45:8 46:4 46:22 47:9,18 48:2,13,20 49:5 50:1,8 51:11,24 52:8,11,18,21 53:1 56:9 57:5,10 60:11 61:7,17 62:20,24 63:23 64:7,8,22 66:5,12 66:20 67:4,9,19 68:7,24 69:11,19 70:2 71:19 72:10 72:24 76:14 77:13 79:7,14 80:5,18,25	81:11 82:4,16 84:11 87:15 91:6 93:19 94:7,11,15 94:18 old 18:19 older 8:6 olive 10:10 onboard 12:25 once 79:19 83:21 84:21 ones 21:7 23:6 40:10 75:18 92:3 open 6:20 24:22 87:23 opened 15:20,23 18:18 operate 10:25 operating 53:15 77:2 operators 10:19 10:22 opine 14:15 16:12 48:1 opining 49:19 53:23 75:10 82:14 opinion 42:9,13 48:3 55:5 59:6 66:5 70:5,15,21 72:10,14 74:3 77:20 79:15 80:5 81:17 82:17 91:6 93:1,10 opinions 7:21 21:21,24 22:8 26:24 27:4 36:19 40:18 41:10 42:14 42:19,24 43:7 47:24 48:8,13 49:1,6,9,12,24 50:2 53:24 81:25 88:20
--	---	---	---

[opportunity - polythf]

Page 14

opportunity 28:14 29:2 opposed 13:12 15:10 31:16 75:24 76:16 oprandy's 1:14 49:21 51:6,9 52:13 53:2,7,21 54:2,15,23 55:18 55:25 56:16,18 57:3,12 59:7,18 61:17,22 66:13 67:11,22,23 70:3 70:17 71:16 72:2 72:15,20,22 74:4 74:15,17,20,25 75:5 76:12 79:16 80:3 83:15 84:18 84:21 86:25 87:4 89:13 90:6,18,24 90:25 91:11 92:7 optically 31:7,7,11 order 25:22 81:12 ordering 96:2 orders 94:8 original 94:20 97:8 osha 38:19,20,22 38:25 39:3,5,10,14 39:19,20 40:23 48:16 50:9,11,17 50:21,22,25 51:1,3 51:7,8,10,11,16 52:2 57:21,25 58:3,5,5,10,21 62:2 63:10,13,16 66:7 67:9 68:4,16 68:23 69:2,6,11,17 70:25 74:15,24 84:25	outlines 57:25 outside 10:4 37:2 38:8 45:17 53:4 53:23,24 54:12 60:17 72:13 81:24 overall 44:20 overlap 45:2,7 owner's 14:5,7 ownership 20:7 p p 51:19 52:20 53:9 55:4 57:22 58:19 59:19 63:8,19 64:8 66:13 69:16 93:3,13 p.m. 94:22 page 2:2,5 20:12 25:4 26:1 28:1 40:15,15 41:6 43:21 44:3 50:8 53:8 55:12,21,21 57:19 65:16 66:3 66:6,8,21 68:24 72:24,25 76:25 77:13 79:14 82:16 99:4,7,10,13,16,19 pages 66:3 97:5 paid 12:11 paint 75:21 painting 73:19 75:25 76:7 pamphlet 51:19 52:5,6,8 62:25 panel 79:25 80:24 81:1 paragraph 65:20 70:15 paragraphs 46:4 part 12:8 21:22 22:8 28:6 39:11 41:18 63:24 64:18	66:8 71:11 93:3 particular 31:2 38:17 74:3 78:17 83:8 91:18 92:8 93:1 parties 22:11 95:16 96:2 partners 3:4 parts 19:20 30:5 73:9 74:8 78:11 79:1 party 1:12,15 3:7 3:14 95:10,16 password 96:1,2 peachtree 1:20 4:14 people 30:1,3 percent 13:14,15 15:6,7,11,12 percentage 13:10 14:20 15:2,9 perception 14:22 perform 28:7,18 29:3 67:17 70:1 71:9 78:6 85:21 performing 26:17 77:23 period 10:21,24 29:11,18 30:2 67:12 periodically 8:5 28:9 person 34:3 68:17 83:19 personnel 37:15 53:12 54:4,11,12 54:16,19 56:7 57:1 perspective 76:1 pertaining 25:17 26:2,4	ph.d. 1:17 4:1 9:19 12:19,24 pha 29:3,7 photocopying 97:7,8 photographs 84:3 84:7 physical 36:4 44:12,13 59:23 62:5,10,17 63:25 64:19,24 76:15 physically 30:2 pictogram 81:6 pinpoint 29:5 place 28:22 95:15 places 64:23 plaintiff 1:3,12 3:2 3:7 15:9 plaintiffs 15:11 22:13,14 34:19 plan 42:9 50:21 plans 43:12 plant 9:13 10:6,23 11:9,14 28:11,17 31:1,4,6,10,18 plants 9:15 28:23 30:7,9,22 platform 23:11 please 94:10 pmh 1:5 point 17:3,15 68:25 70:16 80:10 policies 88:24 89:9 90:23 91:7 92:9 polymer 30:19 polymerizing 30:15 polytetrahydrofu... 30:14 polythf 9:9
---	---	---	--

[port - provided]

Page 15

port 9:5 10:21 portion 56:3 75:21 portions 21:23 38:25 48:7 pose 60:14 posed 76:15,18 poseidon 1:5,6 57:16 76:16,17,22 77:1,6 position 73:2,9,11 74:4,4,9,22,23 75:7,13 76:18 77:8 possible 16:23 90:15 possibly 29:7 49:18 potential 10:14 17:11 28:17 48:10 49:10 51:4 59:8 59:21,24 60:8,14 61:25 62:5,18 65:3 66:18 76:21 79:12 88:4,12 93:5,15 potentially 61:13 62:14 76:22 power 37:17 practical 34:10 practice 86:25 87:7 practices 27:15 pre 34:25 precautionary 61:4 81:8 precautions 53:16 premarked 6:23 premises 67:3 preparation 19:15 19:23	prepare 5:5 87:8 prepared 24:24 41:20 preparing 5:4 6:1 6:7 19:1,5,7,8 20:4 65:21 present 91:17 preserve 42:4,6 pressure 31:18,19 87:5,24 88:9,13 90:13 pressures 24:11 61:12 pressurizing 56:20 pretty 13:17,19 15:15 45:22 previous 20:12 55:21 64:11 80:16 previously 40:3 88:2 primarily 10:11 13:5,23 31:1,21 69:17 93:11 principles 65:18 prior 8:7 22:5 37:22,25 39:19,22 80:7,13,17 82:12 84:21 85:9,11,20 86:5,16 87:5 88:12,18 90:18 private 50:19,23 probably 7:14 8:19 15:15 18:23 19:6,17 20:5 21:8 21:17 23:23 24:6 24:17 26:6 27:19 29:6,13 35:7 37:8 41:18 60:18 61:15 80:12 91:21 problems 79:6	procedure 88:16 procedures 53:16 88:24 89:9 90:23 91:7 92:9 proceeded 17:2 proceeding 95:17 96:1 proceedings 95:7 process 5:4 9:8 11:25 28:7,8,12 52:15 80:14 90:21 processes 28:3,4 processing 45:4 91:11 produce 49:3 56:1 produced 95:17 produces 55:23 producing 11:15 product 9:3 10:8 10:12 14:5,6,12,14 14:18,24 15:1,4 16:11 23:10 24:3 26:8,15,19 28:16 30:13 45:3,23 73:7 76:19 77:9 77:14 78:1,4,5,7,9 production 9:5 11:10,12 31:23 products 1:8,11 3:7 4:9 10:13 13:24,24,25 14:3 14:16 26:14 30:18 34:21 53:17 60:3 77:22,24 78:21,22 98:4 99:1 100:1 professional 7:15 8:24 11:4 28:2 34:24 36:9 38:12 39:15,23 95:10 97:11	professor 32:6,14 32:22,24 program 8:25 12:11,14,15 13:2 prohibited 95:15 97:14 prohibitions 95:5 project 18:10 23:18,22 projects 13:8,13 13:22 18:15 23:20 promulgate 34:8 promulgating 34:11 pronunciation 71:24 propane 35:7,7,9 35:15,22 36:12,17 36:23 37:1 40:2 propellable 55:17 proposals 33:13 33:19,21 propose 18:14 33:18 protected 96:1,2 protection 23:3 27:2,9,16,22 provide 16:25 32:19 34:12 43:21 49:12 61:18,24 68:19 69:4 70:9 70:17,22 71:13 72:11,16 74:23 75:1 76:11 77:25 78:5 80:23 93:13 93:13 95:14 97:13 provided 7:22 14:2 21:12 42:17 58:3,5 73:13,15 74:11,18 75:4,17 80:3
--	--	---	---

[provides - related]

Page 16

provides 36:24 65:17 providing 59:4 63:18 79:2 provisions 97:15 psychology 44:23 44:25 45:5 46:13 46:19 public 100:19 publications 46:16 47:3 published 46:21 pull 63:5 64:2 purchase 36:24 purchaser 78:8 purchasing 92:18 purports 54:18 purpose 53:15 88:6 purposes 53:3 55:2 56:19 pursuant 97:9 pursue 9:19 purview 75:5 87:4 89:7 90:6 91:10 put 31:15 76:5 putting 31:16 57:8 83:20 84:19	questions 93:23 94:1,2 95:18 97:4 quick 43:15 quite 28:17 30:8 quote 44:3 53:2,13 57:11 quoting 89:23	recall 6:12,13 15:20,24 16:2,9,17 16:18,20,22,24 17:21 22:1,11,19 23:7,8,19 24:7,11 24:14 25:10 27:7 35:11,12,24 36:13 36:25 37:9,19,21 38:16 40:5,14 41:5 67:9 receipt 98:18 received 5:8,8 6:10,15 12:19,23 26:21 91:20 receives 95:16 receiving 92:24 recess 43:19 93:21 recognize 79:8 recollection 20:23 21:23 28:9 36:3 recommended 65:19 record 4:12 60:4 64:3 94:4 95:7,9 95:17 97:5 recorded 46:10 recover 55:20 reduced 97:4 refer 69:12 reference 51:19 52:19,22 64:16 78:17 referenced 19:12 40:12 47:23 48:2 53:8 69:8 98:6 references 40:18 41:7,7,8,14 47:10 47:11 80:20 referencing 19:21 19:21 40:8 52:22 55:12	referred 34:18 refilled 67:11 refilling 89:4 refinery 9:4 reflected 42:22 reform 31:13 refresh 19:19 regard 7:15 11:9 17:11,12 26:17 33:12 35:20 44:19 77:18 93:15 regarded 23:10 regarding 10:14 11:25 12:2 23:18 25:20 26:8 27:23 36:4 39:12 44:10 61:25 70:17 71:3 71:14,20 72:11,17 regardless 18:9 registered 97:11 regular 94:14,16 regulation 52:2 74:21 regulations 34:17 38:21,24 39:6 40:23 50:9,12 51:1,11,14,15,16 51:18 53:18 62:21 65:23 69:2,12 72:3 78:22 79:5 92:7,8 93:2 95:3 97:10 regulatory 10:14 58:22 relate 17:13 33:15 37:13,14 51:17 related 10:18,19 13:15,16 14:1 15:1 16:11,13,14 23:20 26:16,18 35:5 36:20 38:16
q	r		
qualifications 21:24 42:16,18 qualify 55:11 56:8 question 4:20,22 14:17,22,23 15:19 16:1 20:2 25:16 27:8 46:23 48:5 53:19 57:23 60:8 60:13 62:8 67:22 70:11 73:1 89:11 89:20 90:1,5	r 97:1 99:3,3 raised 49:13 rapid 61:8,10 rapidly 60:14 rate 17:25 18:2,4,8 18:16,17,19 raw 11:11 28:15 31:20 reach 44:12 77:18 reacting 31:20 reaction 14:22 read 41:18,22 43:25 53:13 65:24 94:4,6 98:9 100:5 reader 58:15 59:3 59:4 reading 19:11,11 26:1 really 13:24 15:5 18:22 20:11 26:7 30:20 32:16 45:23 48:8 53:4 56:4,18 56:23 70:13,20 72:14 81:6 82:1 83:9 reason 4:25 8:17 87:13 90:13 98:11 99:6,9,12,15,18,21 reasonable 50:2 59:17 77:16 reasons 42:13 reassembling 89:3		

[related - right]

Page 17

39:10 45:3 62:5 66:17 70:23 88:21 relates 11:10 14:6 14:14 27:12,20,21 28:18 34:21 35:15 37:12,15,16 38:4,7 38:21 39:14,19 40:2,8,9,21 41:1 44:17 45:3 47:13 47:25 48:4,6,11,13 48:16,25,25 49:21 49:23 53:5 54:16 55:4,19,24 56:7,17 56:21 57:16 58:9 58:13,25 59:1,10 59:16,18,23,25 60:2,19 61:3,10,21 62:14 63:18 64:14 65:1,8,9,12 68:4 68:22 69:7,17 70:6,10 71:17 72:3,18 74:25 75:2 76:21 77:2 77:23 78:7,20 79:25 81:22,25 82:1 85:7 86:4,25 88:24 89:1,9 90:6 90:15,25 91:11,15 92:20 93:14 relating 96:1 relationship 95:8 97:15 relatively 13:20 47:16 release 60:17 62:10 released 62:9 releasing 60:20 relevant 7:21 25:14 43:3 45:12 45:21 47:22 58:6	58:12 rely 39:1 40:25 42:18 47:12 48:14 relying 40:16,21 41:4,9 remaining 88:13 88:17 remember 35:3 remote 1:17 5:13 remotely 4:2 remove 80:13,17 repeat 38:14 45:13 repeatedly 67:10 rephrase 4:21 45:14 replace 63:14 replaced 52:1,5 replaces 58:18 report 2:7 5:5,9,10 6:5,6,9,11 7:22 16:15,23 19:1,7,11 21:11 24:23,25 25:1,4,6,10,22 27:7,13 40:11 41:8,14 42:15,22 42:25 43:4,13 53:25 57:18 64:17 66:20 67:10 81:11 95:8 reported 97:3 reporter 5:14 60:10 71:8 88:15 94:3,7,11,15,18 95:1,4,6,18,19 97:11,11,15 reporting 95:4,14 97:10,13 reports 16:19 17:4 19:19 22:14 25:12 47:23	repository 96:2 represent 4:9 97:5 representation 47:7 representations 95:2 representative 47:5,15 request 34:1 requested 67:2 requesting 85:22 required 60:24 61:9 62:4 65:22 72:11 75:14 100:13 requirement 80:9 81:4 requirements 57:20 58:18 65:19 66:14 68:9 requires 55:10 research 32:17,19 46:5 reserve 97:3 residual 87:5 resource 12:9 63:20 respect 15:17 36:8 44:6 53:21 57:11 59:8 61:7 74:2,5 responses 44:19 46:8 responsibilities 9:17 33:3 72:15 74:17 responsibility 64:23 71:16 72:2 72:4,8 74:19 76:10 84:17,20 responsible 12:13 12:14 61:18,20	70:6,8,22 72:5 77:2,23 79:2 93:14 resume 7:4 8:9 retained 7:25 15:18 17:5,6,9,20 retentions 13:7 return 85:4 86:11 86:21 90:11 93:6 93:17 98:13,17 returned 82:21 83:6 91:4 returning 90:18 review 6:7 17:11 18:6 19:25 20:18 24:1,5 29:3,16,19 33:19,21 41:21 47:6,20 65:15 98:7 reviewed 5:7,9 6:14 25:2,9,13 27:6,11 28:9 29:3 40:16 41:15,17 43:6 reviewer 58:15 reviewing 19:10 19:18 25:10 33:13 33:14 52:24 53:7 reviews 19:15 28:3 28:4,6,20,22 29:7 29:7,16 30:4 43:9 46:24 47:3,8 revisions 52:3 right 4:17 8:15 11:18 22:20 25:18 26:23 31:8 35:11 42:10,13 49:6 50:3,12 51:2,12,15 51:19 52:4,19 53:22 55:11 63:4 63:15 64:20 66:25
--	--	---	--

[right - smaller]

Page 18

80:19,21 81:15 82:7 86:2 89:23 94:20,21 ripped 84:9 risks 73:3 76:18 77:8,10 rogers 46:23 role 9:4,13 16:12 32:15,16 93:8 roles 11:8 rolled 21:8 rotational 9:1,6,25 10:3,8 rotations 10:2 rouge 9:8 rough 15:2 roughly 18:21 25:22 route 3:4 rpr 1:21 rs 31:16 rules 95:3 97:9 running 10:23 11:14 31:18	71:15,25 72:16 73:12,14,25 74:5 74:10,18 75:1,16 77:18 78:1,6,13 79:2 80:2 82:11 88:16 saving 45:4 saw 52:18 saying 53:22 54:8 54:10 57:13,13 61:19 68:7 70:2 75:12 76:2,12 83:14 89:24 90:1 says 44:7 46:6 54:19 schedules 29:24 scientific 32:17 43:24 44:10,18 47:4 50:2 scope 53:23 65:15 65:16,25,25 66:2 74:16 82:14 scott 66:24 67:1,7 67:16 69:25 84:23 90:14 scott's 85:19 86:1 86:4 scroll 24:22 seal 97:8 seated 44:13 section 41:14 42:17 53:10 54:1 54:5,8,10,17 56:6 56:12 58:25 66:1 66:3 82:17,18 see 6:24 9:11 15:19 22:6,22 33:1 37:2 63:7 79:24 seen 84:3,7	sees 81:13 segregate 86:21 segregated 82:21 83:6 85:4 86:11 segregating 73:18 selected 65:20 sell 30:12 77:24 selling 24:3 54:23 54:24 56:2 73:1 73:10 sending 91:23 sent 98:14 sentence 26:6 46:6 47:2 separate 5:4 20:6 74:13 76:2,4 84:17 separated 31:6,8 37:17 serve 33:1 services 77:17 95:14 97:13 set 11:15 12:1 51:14 55:6 58:18 settled 17:3 seven 28:22 29:7,9 share 6:20 sheet 98:11 sheets 10:11 14:4 shift 67:21 68:14 68:17 shipments 11:13 short 59:25 89:22 shortly 32:9 89:11 side 44:17 sign 94:4,6 98:12 signal 58:7 79:23 81:7 signature 97:4,8 97:19	signed 98:20 significant 26:14 38:20,25 similar 67:17 85:21 88:6 91:24 sir 4:16,18,24 5:3 5:24 6:3,18,25 7:5 7:10,12,23 8:1,10 11:4,19 12:20 16:6,14 17:8,22 18:1,6,7 23:14,15 24:25 25:7,20 27:1 28:24 35:1 35:14,19,20,23 37:23 38:17 39:1 40:1,12 42:1,3,11 42:14,15,20 43:11 44:5,24 47:8,17 48:19 50:5,13,15 51:10,13,16,17 52:7,10,14,17 57:8 57:9 62:19,23 63:2,12 64:21 65:4,8 66:19 67:3 75:15 77:10,12 79:10,13 81:16 86:3,7 87:18 93:18,23 sit 6:12 16:22 20:24 23:7,20 39:7 41:22 site 30:2,3 51:5 59:14 67:6,8,18 68:2,14,21 71:1,1 71:6,9,11 79:21 83:23 85:24 sitting 35:11 six 19:6 20:3,6 small 22:22 smaller 35:8
s			
s 2:4 9:13 31:12,15 99:3 safe 26:19 52:9,12 64:9 safely 87:4 88:13 safety 1:14 10:11 11:25 12:1,6 14:2 14:4,12 17:12,16 25:17,19 26:2,5,8 26:12,15,18,25 27:20,23 28:2,3,6 28:15,21 34:9 35:16 38:5,9 41:12 46:7 49:22 50:4,13 53:5 61:25 62:15 70:22			

[society - support]

Page 19

society 46:17 sold 55:10 81:4,10 solely 95:11 solutions 97:8,12 97:13 98:23 somebody 92:17 someone's 35:9,10 37:3 sophisticated 92:19 sorry 15:22 25:15 29:9,11 77:14 sound 4:23 43:17 source 46:20 sources 40:19 southern 1:1 spandex 30:17,18 30:22 special 31:6 specialty 9:14 specific 17:21 27:13 29:6 34:1,4 34:4 36:22 40:14 41:2,13 43:2 47:25 48:24 49:22 58:20 61:9 63:18 64:13 82:1 86:24 95:15 specifically 16:20 23:21 24:13 27:3 27:7,18 35:12 36:13 37:22,25 41:5,11 45:10 46:15 49:4 65:1 95:3 spelled 61:2 62:20 spend 19:4 29:18 spent 19:1 20:3 stable 13:20 stamped 84:12	standard 7:17 33:2,5,7 34:4,16 34:17,20 37:11 38:23,23 45:8 48:17,21 50:6 52:8 53:20 55:8 55:12 57:21 58:16 58:17,23 61:2,5 62:23 63:4,8,16,19 64:8,18,23 66:7,11 68:4,23 69:3,7 70:25 71:2,12,13 72:16 74:25 76:24 77:7 84:25 standards 19:11 19:12,18,20 27:6 27:12,13,16,21,22 33:13,14,15,24 34:8,10,11,21 36:4 37:6,7,9 38:3,6,19 38:21,25 39:3,10 39:25 40:5,7,13,23 47:22,22 48:2,7,7 48:14,18 49:2,20 49:20 50:11,17 51:7 52:11 53:13 53:18 63:9,10,14 63:15,23 69:13 72:3 78:19,23 79:5 93:2,11 start 8:21 10:23 started 11:24 13:4 starting 11:24 29:13 state 4:11 16:18 22:7,23 39:12 50:1,20 57:19,20 59:6 68:25 76:25 77:13,16 95:6 stated 89:11 97:3	statement 81:8 statements 49:20 58:6,13 59:3 61:4 61:4 79:24 80:24 states 1:1 34:13 steady 13:17 steam 9:4 10:19 stenciled 84:12 step 58:11 steps 26:17 88:11 88:21 89:16,22 stewardship 9:3 10:9 store 1:6 stored 90:19 stores 1:6 street 1:20 3:10 4:14 stretched 29:22 strike 82:4 structure 18:12 30:10 student 12:18,20 studied 78:17 studies 12:10 46:9 46:11,12 study 40:22 46:1 sub 33:6 54:5 58:25 subchemicals 10:16 subcommittee 33:23 34:5 subcommittees 33:2,3,4 34:8 subcomponents 65:10 subcontractor 95:6,11 subject 17:13,17 51:6 66:13 67:19	68:10 69:24 70:1 75:4,8 85:8,23 90:7,7 submitted 21:11 95:18,19 subscribed 100:14 subsequent 52:1,3 52:6 subset 14:23 27:19 44:20,25 47:17 subspecialty 12:5 38:8 subtract 7:24 sufficient 12:3 sufficiently 61:1 suggested 46:12 suite 1:20 3:16 4:14 suited 73:14,24 77:25 summary 42:1,5 super 5:14 supplant 63:14 supplement 43:12 supplemental 63:20 supplier 53:3,12 53:21 54:3,9,12,18 54:19 55:3,7,10,11 55:22,23 56:3,8,11 56:13,25 57:11,15 64:25 77:3 82:21 83:7 85:4 86:11 86:22 91:21,23 92:21 93:6,18 suppliers 54:10 73:6 supply 93:9 support 32:16,19 41:10
--	--	---	--

[suppression - time]

Page 20

suppression 34:25 73:2 sure 8:21,24 10:3 10:24 11:8,11,13 11:15 16:21 19:19 21:20 25:23,25 26:13 28:5,10 30:20 32:13 37:4 37:20 45:14 47:20 52:25 64:3 70:24 80:22 86:8 sworn 4:3 97:3 100:14 symbols 80:1 system 28:15 34:12 36:16,18,21 39:20 45:24,25 46:2,3 71:7,7,9 76:16,22 77:11,12 78:11 79:1,3 systematic 46:7 systems 1:5,7 11:22 31:13 34:25 36:9	57:12 59:11,16,18 61:22 62:5,9 66:22,24 67:10,16 69:20,22,25 70:3,7 70:8,10,18,19 71:4 71:6,14,21 72:1,6 72:12,17,19,22 73:3,5,10,16,21 74:7,9,11,14,18 75:2,21,23,25 76:3 76:5,6,17 77:19 78:11,15 80:6,11 81:18 82:18,20 84:13,16 85:2 86:1,5,9,10,16,20 87:5,24,24 88:6,8 88:10,12,17,22 89:14,15,25 90:16 90:17 91:8,16,19 91:20,22,24,25 92:10,17 tanks 35:10 36:15 59:7 67:17,17 73:17,18 76:6,9 87:2 88:25 89:10 91:12 92:20,21 tara 3:15 5:11 98:1 tara.fappiano 3:18 98:2 taranto 6:16 71:23 71:24 tasks 26:17 taught 32:23 39:8 39:14 teach 32:21,22 technology 8:22 teleconference 34:6 teleworking 30:1	tell 4:20 5:18 ten 13:9,11,18,20 15:14,15 19:3 term 14:13 59:25 60:1 terms 14:8 27:15 37:5 43:1 49:15 58:5 60:23 86:19 95:11 test 17:17 48:12 49:7,18,22 53:3,6 53:21 55:19 57:12 61:21 62:5 66:22 67:6,8 69:20,22,24 70:18,19 71:4,6,10 71:11,21 72:12 73:4,17 74:9,11 75:23,25 77:19 78:11,15 81:18 82:18 87:2,22 90:10,20 91:3,12 91:25 testable 49:16 testified 4:3,16 testify 5:1 testifying 43:10 testimony 2:6 5:5 7:6 16:25 18:7,7 20:13,20 21:2,4,6 21:12 25:2,9 85:19 86:1,4 89:19 98:9,18 100:8 testing 61:23 85:24 tests 67:18 69:25 tetrahydrofuran 30:11,12,15 texas 9:5 10:21 31:3	thank 32:1 93:23 93:25 thereto 97:9 theses 89:5 thf 9:9 thing 22:18 43:25 57:14 65:24 things 6:6 7:20 12:7 19:8 26:3,11 82:6 think 9:13 13:19 14:20 15:5 16:17 17:2,3,16 27:4,19 32:7,8,12 36:22 37:11 40:7,20,24 43:5 44:3 45:22 47:4 48:8 49:9,12 49:19,22 50:19 51:8,21 53:20,24 56:13 57:19 58:20 59:10 64:5 67:15 70:20 71:23 72:14 72:25 74:24 76:8 76:25 77:14,21 78:2,19,25 79:3 81:24 84:15 85:19 86:3,24 87:1,18 91:10 92:13,23 93:3,12 third 1:12,15 3:7 3:14 10:18 70:16 thousands 47:16 three 9:1 26:3 29:6 29:15 time 4:19 5:8 6:11 10:10,12,17,22 11:18 12:7,18,20 12:21 13:1,1,10,14 14:22 17:19,24 22:12 28:12,25 29:1,2,18 30:3,11
t			
t 2:1,4 97:1,1 99:3 99:3 take 9:7 12:16 29:16 43:15 67:3 78:5 88:11 93:19 94:13 taken 43:19 58:11 71:6 73:5 80:10 93:21 talk 5:15,16 39:12 50:9 talked 36:10,12 talking 5:13 84:16 92:7 93:4 tank 36:18 37:1,2 48:12 53:3,6,22			

[time - veritext]

Page 21

32:12 33:17 34:15 40:13 43:11,14 47:6,7 67:12 68:15,18 80:7 83:17 84:8,21 85:9,11,13,18 86:16 87:6 88:18 90:10,19 93:24 95:16 98:19 timeframe 98:8 times 16:7 18:15 21:1,3 title 65:22 today 5:1,6 top 73:19 topics 12:17 38:22 touch 45:6 touched 40:7 trained 10:25 53:14,15 54:20 56:8 57:1 training 9:4 10:14 10:18,19,24 23:14 37:12,13 39:9 trainings 39:17 transcript 95:17 97:2,7 98:6,20 100:5,8 transcripts 6:5,14 20:1 47:21 95:17 96:1 transfer 54:14 55:14 57:1 68:20 transferred 31:17 68:8 79:20,21 80:7 transferring 55:1 56:22 68:1 transfill 57:15 77:3	transfilled 83:18 transfilling 52:15 53:10 54:1,6,6,13 55:13 56:5,7,11,18 56:23 57:3,5,7,14 76:23 77:11 83:19 transitioned 9:12 transported 59:14 68:21 71:1 83:23 transporting 68:2 treated 76:2 treating 76:4 treatises 41:9 trial 18:7 20:13,20 21:2 42:10 43:10 truck 23:4,9 true 95:17 97:5 100:8 trump 58:22 truthfully 5:1 try 5:14,15 25:22 27:4 29:18 32:18 34:12,20 46:20 70:12 trying 22:21 29:20 45:15 76:7 81:9 81:23 88:3 turning 57:18 66:20 72:24 twice 21:23 31:10 31:14 two 6:15 16:8 20:11 21:3 26:11 28:20 29:19 30:25 45:6 53:11 54:22 58:24 tyco 1:7,11 3:7 4:9 71:7 74:3,8 75:6 75:11,17 76:11,16 98:4 99:1 100:1	tyco's 69:1 type 13:21 18:9,9 18:10 24:7 34:16 57:6,7 58:4,23 60:20 65:8 75:24 76:3,4,6 88:4 types 14:9 35:25 61:19 65:7 73:18 76:5 89:5 typewriting 97:4 typically 18:13 26:13	87:7 unsure 86:20 update 8:5 updated 7:11 8:6 uploaded 96:1 use 8:3,11 14:13 18:4,8,16 26:19 35:7 53:14 58:8 59:4 65:10 68:13 69:20,21,24 70:4 71:4,5,20 72:12 75:23 82:25 83:5 83:9,12 86:5 87:15 88:5 92:2,2 user 26:16,22 27:23 35:17 54:25 55:16,20 78:8 83:9 92:16 93:6 93:17 users 54:24 63:20 uses 55:17 76:8 usually 26:13 28:20 34:2 41:19
		u	
		u.s. 65:22 uab 12:14,16 32:18 ul 34:16 78:24 undergoing 10:24 understand 4:19 4:22 5:1 25:14 32:5 34:7 62:8 89:13 90:5 understanding 17:10,14,18 20:22 52:7 55:25 66:22 66:23 67:1,7,16 69:23 71:5 78:16 85:7,16,25 90:9,20 91:2 92:6 undertaken 43:3 unidentified 92:10 93:5,16 uniform 34:12 united 1:1 34:13 units 24:3 36:11 university 12:12 unknown 83:4 unquote 53:2 57:11 unreasonable 80:13 85:10 87:1	
			v
			v 1:4,13 98:4 99:1 100:1 vague 48:3,15 valve 87:23 valving 65:10 variety 13:24 18:11 31:20 34:14 38:21 44:14 59:24 60:2 73:6 79:6 82:12 vehicles 37:16 verbatim 95:9 verify 98:9 veritext 95:6,14 97:8,12,13 98:14 98:23

veritext.com 98:15 version 7:9 8:6,8 8:10 51:21,22,22 51:25 52:1,5,6 64:4,5 73:20 versions 8:2,7 versus 22:15,23 vessel 56:22 57:8,9 68:13,13,15,18,21 90:7 91:1,3 victory 1:5,6 videoconference 1:17 3:2,8,14 view 50:11 violations 51:1 vis 74:22,22 visual 7:18 34:12 vitae 2:6 volumes 6:15 voluntary 34:8,10 volunteer 7:15	70:17,22 71:15 74:6,23 75:3,8,12 75:13 76:1 78:1 81:12 warrant 61:1 washington 3:11 way 16:20 29:17 49:5,6,16 70:12 73:20 90:8 ways 18:12 81:2 wc.com 3:12,12 we've 36:7 43:5 55:15 webinar 39:11 webinars 39:16 week 20:1 29:19 85:20 weeks 29:19,22 weigh 48:8 weights 30:16 went 8:24 11:20 19:17 30:9,13 31:1 white 81:5 whiteley 3:9 whitely 4:10 wide 60:2 williams 3:10 winding 32:8,10 wisconsin 22:4,11 withdrawn 97:6 witness 93:25 94:4 94:6 97:3 98:8,10 98:12,19 witnesses 95:19 wondering 89:15 word 58:7 79:23 81:7 work 12:24 19:9 28:2 31:1 36:11 36:19 38:12 39:1	40:3 45:16 46:21 51:5 59:2 67:21 68:14 worked 16:3 18:20 working 11:18 18:14 28:5 29:1 workplace 26:24 50:12,15 79:8,13 82:23 worthington 1:7 writing 25:5 written 16:15,19 21:11 22:13 25:10 25:12 47:8 53:15 84:12 wrote 16:23	z z535 33:2 z535.7 7:17 zoom 71:7 88:14
w		x	
		x 2:1,4	
		y	
waive 94:5 want 50:8 52:21 66:21 94:9,12 wanted 12:2 warn 62:4 63:24 64:19,24 warning 15:1,4 25:20 61:9 71:20 72:11 76:11 79:23 81:13,14,18 82:5,7 warnings 14:1 16:13,14 23:13,14 24:2 25:15,16,17 26:1,2,4,4,8,11 27:20 35:15 36:21 38:5,8 40:22 44:18,20 46:5 47:14 53:5 69:5	white 81:5 whiteley 3:9 whitely 4:10 wide 60:2 williams 3:10 winding 32:8,10 wisconsin 22:4,11 withdrawn 97:6 witness 93:25 94:4 94:6 97:3 98:8,10 98:12,19 witnesses 95:19 wondering 89:15 word 58:7 79:23 81:7 work 12:24 19:9 28:2 31:1 36:11 36:19 38:12 39:1	yeah 22:21 25:3 26:7 28:24 32:7 40:1 52:20 54:21 60:10 62:13 66:2 66:3 69:17 70:20 79:19 81:16 93:12 94:16 year 9:12,13,20 10:23 22:8 30:25 yearly 33:11 years 13:7,9,11,18 13:20 15:14,16 20:13,21 22:5 23:24 28:10,22 29:4,6,7,10 30:25 32:12 33:10 37:19 67:12,13 york 1:1 3:17 young 16:1	

Federal Rules of Civil Procedure

Rule 30

(e) Review By the Witness; Changes.

(1) Review; Statement of Changes. On request by the deponent or a party before the deposition is completed, the deponent must be allowed 30 days after being notified by the officer that the transcript or recording is available in which:

(A) to review the transcript or recording; and

(B) if there are changes in form or substance, to sign a statement listing the changes and the reasons for making them.

(2) Changes Indicated in the Officer's Certificate. The officer must note in the certificate prescribed by Rule 30(f)(1) whether a review was requested and, if so, must attach any changes the deponent makes during the 30-day period.

DISCLAIMER: THE FOREGOING FEDERAL PROCEDURE RULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

THE ABOVE RULES ARE CURRENT AS OF APRIL 1, 2019. PLEASE REFER TO THE APPLICABLE FEDERAL RULES OF CIVIL PROCEDURE FOR UP-TO-DATE INFORMATION.

VERITEXT LEGAL SOLUTIONS
COMPANY CERTIFICATE AND DISCLOSURE STATEMENT

Veritext Legal Solutions represents that the foregoing transcript is a true, correct and complete transcript of the colloquies, questions and answers as submitted by the court reporter. Veritext Legal Solutions further represents that the attached exhibits, if any, are true, correct and complete documents as submitted by the court reporter and/or attorneys in relation to this deposition and that the documents were processed in accordance with our litigation support and production standards.

Veritext Legal Solutions is committed to maintaining the confidentiality of client and witness information, in accordance with the regulations promulgated under the Health Insurance Portability and Accountability Act (HIPAA), as amended with respect to protected health information and the Gramm-Leach-Bliley Act, as amended, with respect to Personally Identifiable Information (PII). Physical transcripts and exhibits are managed under strict facility and personnel access controls. Electronic files of documents are stored in encrypted form and are transmitted in an encrypted fashion to authenticated parties who are permitted to access the material. Our data is hosted in a Tier 4 SSAE 16 certified facility.

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